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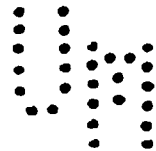
Bulletin

No. 91

HARRISBURG, PA.

MARCH, 1917

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**PUBLISHED MONTHLY BY
THE STATE DEPARTMENT OF HEALTH
SAMUEL G. DIXON, M. D., LL. D., Sc., D.,
COMMISSIONER.**

LITTLE TALKS ON HEALTH AND HYGIENE.

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Health



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LITTLE TALKS ON HEALTH AND HYGIENE BY THE COMMISSIONER.

These little chats are designed to convey to the people of Pennsylvania homely facts which may assist in the promotion of the public health. The statement of simple truths which all may understand and simple rules of conduct for individuals, families and that larger group of persons making up the public has been kept in mind in this presentation.

SANITATION PUT TO A TEST.

Typhus fever exists today in Mexico, and thousands of Mexicans are traveling across the boundary lines into the United States in search of work and the good pay it brings. The boundary line formed by the Rio Grande is so long and tortuous that our little army of sanitarians is not able to prevent many of the Mexicans from coming into our midst without any sanitary treatment. The danger is obvious.

There is, at present, scientific evidence that the causal agent of typhus fever is found in the bodies of lice feeding on the blood of typhus fever patients. While the scientific workers continue their

study of the matter we are fortunate in knowing that the micro-organism is carried in the body louse and transmitted by its bite. There is a fair degree of suspicion that the head louse may also carry and transmit the typhus organism.

The body louse delights in woolen clothing, laying its eggs upon its fibers, but it can make itself very much at home in cotton spun material.

To prevent the introduction of typhus fever from Mexico into the States, no Mexican should be permitted to cross the boundary line without a permit given by the United States Public Health Service. All health officers should be on the lookout for the newly-arrived Mexicans who are settling in construction camps and about the centers of great industries and when these foreigners are found and fail to show a clean bill of health, they should be examined for lice. If lice are found, the clothes of the patient should be steamed or burned, the hair should be clipped and the body washed and wrapped in a sheet soaked with a mixture of one-half kerosene and one-half vinegar. The hair of the head should be wrapped in cheese-cloth which has been soaked in this same mixture.

In looking for the lice, it is well to remember that when you begin to strip the body they immediately make their retreat into the clothing. This makes it necessary to examine the clothing and if lice are found it is certain that they have been on the body. Therefore the process of disinfecting or delousing is imperative.

If conditions will not permit of the destruction of the clothing, it should be steamed or baked until all signs of lice have been destroyed. The eggs must also be destroyed and this requires a penetrating and prolonged steaming or heating.

If infected lice are carried across the border into our midst, typhus fever may become prevalent in many places, as shown by California's experience. Those carrying lice are very apt to get into crowded housing conditions, where the lice have every opportunity of infecting a large number of people.

When health officers have proof that foreigners have come from infected districts, they should be held in quarantine for about twelve days after being cleansed, to cover the incubation stage of typhus fever.

Epidemic typhus fever is a very fatal disease, yet the death rate can be greatly reduced by intelligent medical aid. There has been a shortage of such medical aid in Pennsylvania for several years, ante-dating the outbreak of the present war and hereafter this shortage will inevitably be greater.

It is quite possible for the medical men and the Federal government to mis-calculate the necessities of our home people. Thousands

of our best physicians and even teachers of medicine are leaving our shores for foreign countries. This condition of things makes it important,—if we intend to keep up the basic supply of food, ammunition and warriors,—for our people at home to listen to those who are versed in preventive medicine and to heed their advice. All should be awake to the necessity of carrying out sanitary laws, as well for individual selfish gain, as from recognition of the moral duty we owe our country in this time of war.

Individual cleanliness and a clean environment are essentials in excluding typhus¹ fever. Transportation companies should demand health certificates before transporting immigrants coming from Mexico, and our great industries should do everything possible to provide proper housing for their employees, not only to prevent possible epidemics of typhus fever to avoid other communicable diseases.

COMFORT HOUSES.

Comfort houses in cities and towns are essential to both health and comfort of our people, yet in Pennsylvania the traveling public, visiting a town for a day or two for sightseeing purposes, is unable to find comfort houses or lavatories.

These good people, often strangers, are driven into saloons in search of lavatories. The men often buy drinks because they feel indebted to the innkeeper. It may even be that this drink may be taken for the first time by one of weak character or with insufficient force of mind to deny himself another. This his visit may lead indirectly to a sad ending.

On Sundays and holidays, when the stores and taverns are closed, our visitors are hard pressed to find places of rest and comfort. Comfort houses maintained in sanitary condition are not entirely without a money cost, but they are really essential. Their absence not only causes discomfort but ill health.

When Governor Tener placed the Health Department in charge of Gettysburg to prepare it for the great meeting of the Blues and Grays at the Fiftieth Anniversary of the Battle of Gettysburg, we reviewed the necessary things to be done, such as providing an ample water supply, hospitals, dispensaries, sewage disposal, etc.,

and we conceived the idea of having a generous number of comfort stations, well placed throughout the town of Gettysburg and along the roads leading to and from the old battlefield.

These houses had male and female attendants;—thousands upon thousands of people made use of them and as places of rest and comfort they represented a large factor in making our phenomenal health record at this memorable occasion.

During the gathering of the Blue and the Gray at and around little Gettysburg, with its normal population of about eight thousand people expanded by one hundred thousand visitors, there were only nine deaths during the seven days, notwithstanding the old age of the veterans and their families.

If our health boards and councils will awake to the necessity for comfort houses, designed and maintained to keep up sanitary conditions, they will help to advance not only the health, but the morals of our people.

WATER.

“Water!—of Heaven, first born, ever in all ages a sacred emblem from that remote period when the earth was without form and void and darkness was upon the face of the deep and the Spirit of God moved upon the face of the waters. Alas! in these latter days, more abused than is any other element.”

From the settlement of America by the Spanish, our water ways, from babbling brooks leading to and including the broad water highways of nations, have been used for the disposal of sewage and this without restraint until a few years ago. Since then the effort to change this condition, begun under the law of 1905, has resulted in reducing typhoid fever 74 per cent. as well as lessening the suffering and sorrow of thousands of human beings.

The time consumed in bringing about the cleansing of streams is not for the want of sufficient legislation; that is ample. The progress has been impeded by the fact that homes and industries since our earliest civilization have grown very much as “Topsy” did, without any thought of the morrow. With the enormity of the insanitary conditions to be met, with so many lives depending upon the products of the offending producers, much care, financing and time must be used to eliminate the death dealing condition.

The sewage from individual sources has largely been removed from our streams and our industries have removed their wastes gradually and continually. This however, has been a work that of necessity moves slowly, for upon the great industrial plants our people depend for many of the necessities of living and hundreds of thousands of them earn the bread and butter for their families by working in the great manufacturing plants of the Commonwealth.

During the last decade our people have been educated to the understanding that pure water is as essential for good health as proper food. This was recognized however, in the time of Nero; that great and arbitrary Emperor was fined for polluting the Nile.

As the best results in civilization are obtained by cooperation and not by the harsh enforcement of police laws, appeal is made by the Department of Health to every citizen of Pennsylvania to guard from pollution the waters which we must use for domestic purposes. To restore our streams to their virgin conditions will of course be somewhat expensive, yet money cannot be better spent, as the public health depends upon improving our domestic water supplies—in truth it is a great factor in increasing the power of our Nation, which depends upon the health of its people.

THE OUTLOOK FOR INFANTILE PARALYSIS.

We are fast approaching the warm months of the year that favor infantile paralysis.

Last year the public lost its nerve. This season it is hoped that the epidemic will not reappear.

From the history of the disease it would not be surprising if we had comparatively little this year,—yet no man can predict what Nature may do.

The health authorities are alert and busy, doing all the things which they believe may in any way lessen the chances of another epidemic.

On account of our want of exact knowledge as to the origin of the disease and the part taken by Nature in transmitting it from one to another, we must avoid all places in which infantile paralysis manifests itself. We can also be careful to avoid exposing our children to persons, furniture and clothing coming from infected houses or districts.

It may perhaps require direct contact with the sick to contract the disease. This, however, is far from being a settled question; it is quite possible that there is a carrier;—for instance, there was some evidence brought forward to demonstrate its conveyance by a stable fly; this has not been proven, but there may be some other insect that does carry it.

The State Department of Health has placed sick monkeys with well ones without causing the latter to contract the disease, so far as we could determine. It is claimed, however, by some of our best investigators that the disease is transmitted by means of insects. Another possible explanation would lie in the contention of certain medical men that many children have the disease so lightly that it is never discovered.

The well must be kept from the sick, however, in human life. While the disease is lurking about, no healthy child should be exposed to one showing the least illness.

The health authorities are not contemplating any general quarantine. It is too soon as yet to decide about that.

The State Health Department has always held that the sick child should be quarantined for two weeks.

The discharges from the bowels, throat or nose should be disinfected. The nurse or the one in charge of the sick child should wear a gown and the face and hands should be washed or disinfected before the nurse mingles with those outside of the sick room.

If the conditions of a home are bad and if the child cannot be isolated or kept alone, the hospital is the place for it. This transfer should be made very early in the sickness as quiet and rest are essential to recovery. A doctor experienced in treating the disease and a nurse with like experience add much to the chances of recovery.

Traveling with children and allowing them to congregate in groups should be discouraged. In fact, during an epidemic it should be forbidden under police regulation. Cleanliness of the home and person are essential. All animal and insect life should be kept out of the house. Screening of all windows and doorways is imperative. No food should be eaten raw.

YOUR HEALTH AND THE WAR.

Since we have gone to war let us have in mind the lesson of the tremendous bearing of health problems on the welfare of our armies in camp and our citizens at home, so that we may not have to re-learn it by bitter and calamitous experience. It would seem to be a late date to have to point out the almost self-evident fact that sickness will decrease the national efficiency by just so much, whether it be among soldiers or non-combatants, but the general public does not give enough attention to this aspect of war's demands, the accent being placed on more spectacular elements of preparedness.

One of the first factors in the health of a nation at war—or at peace, for that matter—is its food. It cannot be healthy and strong without good food and plenty of it. Therefore agriculture and gardening must be intelligently and intensively stimulated, so that larger crops shall be brought forth.

The housewife's task will be to economize the food supply and cook it with such skill as to make the meals tasty and digestible.

The streams from which come our domestic water supply should be carefully guarded against pollutions, so that communities shall not run the risk of being infected with deadly diseases.

Vaccination against typhoid is a valuable step in preparedness under conditions as they are at present, and the Commonwealth of Pennsylvania, through the agents of the Department of Health, is prepared to give typhoid vaccine to those who cannot afford to purchase it.

While our water supplies have been so improved in the Commonwealth that typhoid fever had been cut down 75%, vaccination against the disease during this emergency should bridge us over a period in which we must attain the highest efficiency of health and should give the Health Departments throughout the Commonwealth time to continue their work of reducing the pollutions of our streams and enable our people to go on with their daily labors, producing food and all other things necessary for our strength during war.

Smallpox is a loathsome disease and often a fatal one and under the best of circumstances it creates a long period of incapacity for work, and demands the strictest kind of quarantining of those who may occupy the same house. The disease can be absolutely prevented by vaccination. The presence of smallpox would greatly handicap the efficiency of our great Commonwealth of Pennsylvania in serving the nation in time of war.

The Life Extension Institute, with which we are cooperating, has estimated that nearly half the body-building food and 70 per cent. of the sustaining food on American tables is derived from such grains as wheat, oats, corn, rye, barley, rice and buckwheat, and that these grains are to the human machinery what coal is to the manufacturing industries, viz.: the greatest source of heat and power.

The time has come to consider these matters in a spirit of patriotism. It is the duty of every citizen to attain physical fitness, and of the people as a whole, to take measures for the increased production of food materials.

Wanton destruction of food is as real an injury to our country as destruction of munitions or arms, for in the last analysis the nation that is well fed is the nation that will prevail. These matters are already claiming the attention of the Federal Government.

Hand to hand with the mobilization of factories and munitions must go the mobilization of agricultural products, the planting with grain and vegetables of as many acres of land as possible and the distribution of the crops in the most economical way.

ARMY BLANKETS.

United States army blankets are not economical for private or permanent hospital use. For the reader to fully appreciate this criticism he must disabuse his mind of a common fallacy, viz.: that the purpose of blankets and clothing is to give heat to the body. Blankets and clothing only retain the heat of the body by preventing it from being taken off by the general atmosphere. Therefore, blankets should be soft and pliable so that they will fall of their own weight and fit snugly to the form, thus preventing the air from circulating freely between the blankets and the body.

The army blanket is woven so closely and becomes so rigid when thrown over the body that it fails to conform closely, but stands out and permits an air space between itself and the body. This interferes with its heat-retaining qualities to a marked extent. After the test of practical application in our large hospitals in the Commonwealth of Pennsylvania we find in the cold high mountain regions that we can get along with three softer woven blankets better than with five army blankets.

From this discovery and its practical application we not only save much money in maintaining our hospitals but we give our patients more comfort. The blankets are warmer and at the same time are lighter in weight.

The army blanket was originally so made that it would be strong and durable in active campaigns, where it had to be carried on the soldiers' backs, on saddles of horses, or in the supply wagon. Owing to the fact that they were made of all wool, had long lives, and were made in a substantial way, they soon came into general use, particularly into hospital use and more especially into hospitals where the open air treatment was necessary.

The State Department of Health of Pennsylvania has its blankets made according to the following specifications:

"Double blankets to be not less than 80" long by not less than 60" wide when finished. Weight to be 4½ lbs. per pair when finished.

"Warp:—To be of cotton, long staple. To be well carded and evenly spun, of No. 14 yarn, 43 threads to the inch.

"Filling:—To be blend or mixture of not over 20% cotton. Balance to be pure wool, staple good and true, 32 picks to the inch in finished product. Color to be medium gray.

"Border:—No border.

"Binding:—Each pair of blankets to be bound on the ends with a two inch gray mohair binding. To have two rows of stitching ¼" apart and to count about six stitches per inch.

"Embroidering:—Each pair of blankets to be embroidered with the letters P. S. C. S. 4½" high. To be in center of blanket.

"Note—A blanket showing the general design and construction is on file in the Philadelphia office."

SOME EVERYDAY CAUSES OF INDIGESTION.

The teeth are the first instruments employed in the process of digestion. They represent the millstones that cut and grind the food. As they do so, alkaline secretions are given out by glands in the mouth and mix with the food to cause the first change it undergoes in the process of being absorbed by the system.

Good teeth are essential to normal digestion. Teeth which are diseased, or artificial teeth held in place by settings which retain

food, are injurious to health because they provide places in which disease producing germs grow and multiply.

If you have decayed teeth or false teeth difficult to keep clean, have them attended to. The germs they foster produce poisonous substances which interfere with the normal functions of such vital organs as the heart and kidneys.

If you put your teeth in order, provided the organs have not become chronically affected by long subjection to improper conditions in the mouth, the discontinuance of these poisons will permit Nature to reassert herself and the organs whose functions have been affected will resume their normal course in sustaining the scheme of life.

Care of the teeth should begin with childhood and they should be kept cleansed by means which do not wound the gums. They are usually destroyed by acids, therefore no mouth washes containing acids should be used. Consult your dentist before using mouth washes or cleansing preparations in the form of powders, creams, etc.

If you are interested in your digestion, you will avoid incongruous mixtures of foodstuffs made up solely to tickle the taste. Potato salad made in the American style is a good example. The potato is composed chiefly of starch. That is digested in the "second stomach" where the secretions are alkaline. If you soak the potato in vinegar you provide an antagonist to this alkaline secretion. Therefore, you are materially delaying the digestive process.

Poor cooking often makes proper food either difficult or impossible to digest. The hard-earned money of the household goes to the purchase of good food which is often ruined by the housewife ignorant in the art of cooking. Good cooking is not a matter of whim or of flattering the palate. It is an absolute requisite to health. Therefore the art should be taught in our public and parochial schools.

If you eat too fast when overtired, heated or chilled, you will often suffer distressing indigestion. Eating in stale or impure atmosphere interferes with digestion. If you are compelled to take a meal under such circumstances, the quantity of the food should be reduced to the minimum.

Beyond the things which have been mentioned,—(all of which can be controlled to a greater or less extent)—it will be found that certain foods in themselves do not agree with certain persons. If you are eating sensible food in a sensible manner and find that some particular thing disagrees with you, the only rational thing to do is to cut it off your list.

NEGLECT FOR BABIES; CARE FOR CALVES.

The average calf or colt receives more intelligent care than does the baby of our own flesh and blood.

Why should this be so in this highly civilized country of ours, where people are naturally affectionate and kind? In the first place, it is due to the psychologic attitude of many parents. They seem to take it for granted that anything called by the name of "food" will sustain the lives of children satisfactorily, if administered in regular three-times-a-day portions.

They don't stop to think that something besides a name is needful to make real food. The result is that every day, we see many children little in stature, and with soft, weak muscles, stunted from want of a well-balanced diet. For instance, many of these little ones have been fed regularly on bread and molasses, and have thus entirely missed fat and albumin. Such children have little or no resistance to disease and often fall victims to tuberculosis because their parents did not know that a mixed diet is necessary to nourish the different parts of the anatomy and to supply the heat and other force needed to carry on the work of the body properly. But those same people know what their domestic animals need to eat and see that they get it.

Some parents go further and permit their children to select their own food. There was a time, in the remote age of the ancestors of man, when this might have been safe. In those days humans participated to a degree in the animal instinct to avoid harmful food. We have completely lost it nowadays, and if we permit our children to select their own food, we place them at a distinct disadvantage when compared with the colt or calf already mentioned, for the youngest animal shares its elders' instinct to differentiate between poisonous and non-poisonous products of nature.

What is to be done for these babies? We have decided that the colt and the calf do not need any help, but who will teach the parents even a few of the things they should know about their children?

There is somebody to teach these parents about their colts and calves and even the little pigs, if they don't happen to know already. Our national government has undertaken the task and its Department of Agriculture has a man at its head who sits in the President's Cabinet. He has Congress appropriate large sums of money to teach farmers how to feed and care for new born colts, cows, pigs, sheep, chickens, and all the other stock.

But our National Government does not seem to have thought about babies. There is no Department of Health at Washington, and at Cabinet meetings the babies have no representative, though the pigs and calves have.

The composition and values of foodstuffs for human beings should be taught in our schools and a Federal Department of Health should be established which will look after human-kind at least as well as the animals are looked after.

Then we would cease to see on our farms puny, half-starved children and beautifully developed Jersey, Guernsey and Swiss cows, and Percheron, Clydesdale and Hackney horses in the pink of condition;—a condition obtained by following instructions given by the Department of Agriculture of the United States Government.

DOCTOR AND PATIENT.

Do you know how to use a doctor? When you are ill you send for him, of course. He has an automobile in which to visit people who wait so long before seeking his advice that they cannot visit him. He begins by asking all sorts of questions which may seem to have little to do with the matter in hand.

Suppose you did go to a banquet and eat and perhaps drink a little more than usual. Perhaps you have been working extra long hours at the office and naturally haven't had time to take exercise. Maybe you have neglected yourself a trifle. The important thing is that you are sick and it is the doctor's business to give you medicine that will right all this promptly. You haven't time to stay in bed and he knows it. Therefore, the thing for him to do is to give you a teaspoonful of something, three times a day before meals, that will set everything straight forthwith. This is the ordinary conception of a doctor's duty to his patient.

Now as to the doctor's side of it:—When he visits a patient he probably thinks,—after asking questions;—"Here is a man who works hard, eats too fast and too much, fails to exercise and when fatigued resorts to a "nip," two or three times a day, to "buck himself up." His digestive organs are overworked and what he needs is a change of habits and a modification of his method of living. A little rest, if I insist upon it, a tonic and some restrictions of diet

for a few days will pull him through this spell. He will probably take the medicine I have prescribed but will forget the advice in a week." That's the doctor's side of the case.

Then again there is the man or woman who is almost certain that something is wrong with him physically. Some of the bodily functions are not right and he knows it but keeps on because he "hasn't time to be sick." Finally he is forced to seek advice and then the doctor discovers that there is some profound organic disease which perhaps has progressed so far that he is helpless to give aid.

When about to build a house you call in an architect who acts as your adviser, makes your plans and sees that they are carried out. If you are going into a business deal your lawyer draws up the contract, sees that your interests are protected and advises you how to proceed. But in the case of the *doctor*, you call him in when the damage is done and you expect him to give you something in a bottle that will undo the results of weeks, months or years of indiscretion and neglect.

DANGERS OF SPRING.

When Nature, awakes from her winter lethargy and when the first faint promises of Spring soften the winds, man harkens to the foretokening in common with all animal life.

The desire for change and relief from the winter routine is strong in all of us and this is the time when caution should be exercised while our impulses seem to lead us to cast it aside. The high death rate from pneumonia and tuberculosis, which inevitably accompanies the early Spring months, is evidence that this change from winter habits demands the exercise of caution, if evil results are to be prevented.

The city dweller, in particular, is apt to over-eat and under-exercise during the winter season. As a result, when Spring approaches, his physical strength is below par;—he becomes easily fatigued and therefore susceptible to the attacks of disease germs.

Old people who suffer from the cold during the winter do not appreciate that ventilation does not mean exposure and they are apt to

suffer from the sudden changes of temperature in the Spring. It is because of these winter habits of poor ventilation and insufficient exercise that we feel debilitated when Spring arrives.

The sensible citizen, who sleeps the year round in the fresh air, eats in moderation and exercises rationally, is far less subject to Spring fever and Spring ailments than is the more self-indulgent individual.

During months when fluctuations of temperature are frequent, care should be taken to maintain an even bodily temperature by proper protection in the way of clothing. Better some slight discomfort at noon than a chilling on the way home from work at night. Moderation in diet is also advisable. This, with a reasonable amount of exercise and well ventilated sleeping rooms, will aid all in resisting the dangers accompanying Spring's approach.

PENNSYLVANIA HEALTH BULLETINS

1.	July,	1909.	The Disease-Breeding Power of House-flies; Method of Prevention.
2.	Aug.,	1909.	Note on the Similarity of Barium Carbonate Poisoning and Rabies in Dogs.
3.	Sept.,	1909.	The Family Physician.
4.	Oct.,	1909.	Legal Rights and Tuberculosis. The Public Drinking Cup.
5.	Nov.,	1909.	The Germicidal Effect of Water from Coal Mines and Tannery Wheels upon Bacillus Typhosus, Bacillus Coll, and Bacillus Anthracis.
6.	Dec.,	1909.	Report on the Effect of Repeated Injections of Products of the Tubercle Bacillus on Lymphatic Organs.
7.	Jan.,	1910.	Little Dangers to be Avoided in the Daily Fight against Tuberculosis.
8.	Feb.,	1910.	The Object to be Attained by the Medical Inspection of School Children.
9.	March,	1910.	Conservation of Human Life in Pennsylvania. The Results of Four Years' Work of the Department.
10.	April,	1910.	The Biological Treatment of Tuberculosis as Conducted by the Department.
11.	May,	1910.	The Bubonic Plague, its Origin, Progress, and Means of Prevention.
12.	June,	1910.	A Retrospective Glance. 1. Susceptibility to Tuberculosis. 2. Purity of Milk. 3. Bovine Tuberculosis.
13.	July,	1910.	Experiments on Tubercule Bacilli, Old Tuberculin, and the Fluid of Dixon.
14.	Aug.,	1910.	The Conservation of Child Life in Pennsylvania.
15.	Sept.,	1910.	Obedience to Nature's Laws the Primary Defence against Disease.
16.	Oct.,	1910.	The Conservation of Infant Life in Pennsylvania.
17.	Nov.,	1910.	Pennsylvania's Standing Army of Health.
18.	Dec.,	1910.	Producers and Consumers. Pennsylvania's Tuberculosis Schools.
19.	Jan.,	1911.	The Effect of Injections of Taurin upon Tumors of Mice and Dogs.
20.	Feb.,	1911.	Some Duties, Ideals, and Opportunities of the Country Doctor.
21.	March,	1911.	Malaria: How it is Caused, and How to Get Rid of it.
22.	April,	1911.	Health.
23.	May,	1911.	The Common Fly. How it Develops. Why it must be Destroyed, and How to Destroy it.
24.	June,	1911.	Effects of Products of Tubercle Bacilli on Epithelium.
25.	July,	1911.	Five Years of Tuberculosis in Pennsylvania.
26.	Aug.,	1911.	Organization of the Pennsylvania State Department of Health.
27.	Sept.,	1911.	Tuberculosis, in the Country as well as in the City, a Disease of Bad Housing and Lack of Nourishing Food.
28.	Oct.,	1911.	The Preparation of the Biological Products Distributed by the Pennsylvania Department of Health.
29.	Nov.,	1911.	The Foundations of State Medicine.
30.	Dec.,	1911.	Experiments Tending to Show the Infrequency of the Occurrence of Tubercle Bacilli in the Urine of Patients Suffering from Pulmonary Tuberculosis.
31.	Jan.,	1912.	The Baby the Most Important Problem in Modern Life.
32.	Feb.,	1912.	Insects. The Common Forms in Relation to Public Health, and Methods for their Destruction.
33.	March,	1912.	The Opportunities for the Trained Nurse in Sanitary Service.
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PENNSYLVANIA

Health Bulletin

No. 92

HARRISBURG, PA.

APRIL, 1917

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**PUBLISHED MONTHLY BY
THE STATE DEPARTMENT OF HEALTH
SAMUEL G. DIXON, M. D., LL. D., Sc., D.,
COMMISSIONER.**

LITTLE TALKS ON HEALTH AND HYGIENE.

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| 1. Spring Tonics, | 6. Health: Keystone of the Arch of Preparedness, |
| 2. Consolidated Public Schools, | 7. Foodstuffs in War Time, |
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LITTLE TALKS ON HEALTH AND HYGIENE BY THE COMMISSIONER.

These little chats are designed to convey to the people of Pennsylvania homely facts which may assist in the promotion of the public health. The statement of simple truths which all may understand and simple rules of conduct for individuals, families and that larger group of persons making up the public has been kept in mind in this presentation.

SPRING TONICS.

With the honk of the wild geese, flying northward, the patent medicine and home remedy manufacturers seem to be inspired anew and there follows a wave of Spring Tonic advertisements.

The tonics which the vast majority of individuals need at this period of the year are fresh air, exercise and a simpler diet. Owing to weather conditions many of our activities are restricted in the winter time. There is also a tendency to eat excessively of meat and fatty foods. As a result, when Spring arrives with its warm

days many of us are like furnaces so choked with fuel that they don't draw well.

You cannot buy relief from these conditions at a dollar a bottle. Medicine will not compensate for over-eating and under-exercise. The high death rate which invariably prevails at this season of the year from pneumonia, tuberculosis and other respiratory diseases, is largely due to the reduced physical resistance of individuals which makes them particularly sensitive when the sudden changes of temperature occur incident to the season. Old people are particularly susceptible as they are housed more closely during the winter time than young folks.

Let your Spring Tonic prescription read something as follows:—

1. Eat meat but once a day and sparingly.
2. Those not under the doctor's care should drink a glass of water before retiring for the night and another an hour before breakfast.
3. Get all the fresh air possible.
4. Sleep with your windows open.
5. See that your clothing is suitable and heavy enough to protect you against sudden changes of the weather.
6. Walk five or six miles a day in the open air.

CONSOLIDATED PUBLIC SCHOOLS.

As we stand on the threshold of the world's war we must not forget that our children, who are soon to take our places and assume our responsibilities, are still to be cared for as before.

One of the principal problems concerning the health of children is brought up by their association in school life. During vacation time, children do not congregate indoors as they do when the school term is on and it is in the vacation season that we have the lowest death rate from communicable diseases. The death rate is a different story and a sad one during the school months.

The State Department of Health has a chart which shows the relative number of deaths of Pennsylvania children from communicable diseases during the various months. It is made up of columns and the height of each column tells the story for its particular month.

During the summer,—the vacation period,—the chart shows only little stumps of columns. Just as soon as the schools begin and children are forced to sit together in rooms, oftentimes with closed windows, these little stumps begin to grow. The sight of these higher columns is a sad one to the health officer who feels his responsibilities keenly.

The broad question of the advantages and disadvantages of "consolidated schools" is not to be considered in this little chat but certain of their aspects, as they affect health, are worth looking into.

These larger school houses, of course, draw pupils from over a much greater area than did the little red school house of the past. The longer distance of travel takes more time and for this reason, perhaps more than any other, conveyances are provided to transport some of the children.

Any old trap seems acceptable and its carrying capacity is elastic, so the children, boys and girls, are simply piled in. No caretakers are in charge and there results a jam of the strong and weak, the sick and well, the vulgar and gentle of both sexes; and they are packed in as sardines are packed in boxes.

The air in many of the closed vehicles soon becomes foul. If one child happens to be in the initial stage of measles, every child in the conveyance who has not had the disease is likely to go down with it. While, unfortunately, it is not generally considered by the public as one of the serious diseases, it often leaves the patient in a very susceptible condition to tuberculosis or other serious affections.

The present system of carrying children to and from the larger centers of education is hard on health, morals and life.

If a thing is worth doing, it is worth doing right. It is suggested that we stop organizing any more consolidated school centers until we organize proper ways and means of transportation, means which will have direct care for morals and health.

WASHING DISHES.

Common tasks are important because they are common:—for example, washing dishes. Everybody may not wash dishes but all must eat from dishes that somebody has washed.

To properly cleanse dishes and eating utensils, they should be washed and rinsed in boiling water. Washing in lukewarm water, even with soap, is not sufficient.

There are numerous communicable diseases caused by germs which are present in the mouths of those who are afflicted. People in the various stages of tuberculosis, diphtheria, syphilis, etc., may transfer disease germs from their mouths to eating utensils. Unless they are sterilized by boiling water, they are sources of danger to whoever may use them subsequently.

Forks in particular, because of their construction, are difficult to clean thoroughly and they should be washed with care.

In public eating houses exceptional attention should be given to the sterilization of eating utensils and drinking glasses. Care in the choice and preparation of food is easily offset by careless service.

THE FLY AND THE EPIDEMICS.

Reams have been printed about danger from the house fly. Despite all that has been said, it is a self-evident fact that people do not understand how real and how great is the danger from these pests; otherwise a single season would be sufficient to wipe out the dangerous nuisances. When people once understand the part that the fly plays in the transmission of disease they will look upon anyone who maintains a condition which breeds them as a public enemy, to be summarily dealt with. At least they should do so.

There is much wasted advice about swatting the fly and trapping the fly. What we must learn to do is to exterminate it, by doing away with all breeding places.

Stables with manure piles that are left unremoved for weeks, garbage dumps and unscreened and carelessly constructed outhouses are the sources of the fly pest. Unpleasant as this may be to hear or read, it is true. Any community which wishes to free itself from flies must eliminate these offensive features.

That flies can and do carry the germs of typhoid fever and other diseases is a matter of definite knowledge. It is a wise mother who screens the baby's crib.

The lives of thousands of children under one year of age would be saved annually if the fly were eliminated.

SODA FOUNTAINS AND SOFT DRINKS.

The soda fountain has become a National institution. However, that fact is not to be taken as a recommendation of the institution. Naturally, during the warm months there is an unusual craving for cool liquids. What the human body really demands in hot weather is water:—cool water, not ice cold. This is a natural demand and one that should be supplied.

We have acquired a taste for sweetened concoctions which masquerade under the names of all the fruits that were found in the Garden of Eden and other mythical ones, never heard of except on soda fountain advertisements. Most of these are chemical products in which no real fruit juice is used. They are not nourishing.

In very hot weather a glass or so of these sweetened liquids will often interfere with digestion and their tendency is to lessen the normal appetite for nourishing food.

Palatable summer drinks can be made with pure fruit juices to which cool water is added. When so made they are far more palatable and refreshing than the sickly sweets which are the common offering of the soda drink emporiums. Ice cold drinks irritate the stomach and sooner or later produce catarrh.

There is another factor connected with the serving of drinks,—soft and otherwise,—which is open to the severest criticism. In many places the provision for the cleansing of glasses is most inadequate. Too often a hasty sousing in a tank of water is the only washing which they receive. It is a well known fact that washing utensils in cold water does not properly cleanse them nor destroy germ life.

The evils of the public drinking cup have been thoroughly exploited. All too often the soda glass comes within this category. Let the Public demand decency in the serving of its soda fountain drinks.

HEALTH: KEYSTONE OF THE ARCH OF PREPAREDNESS.

The perfect manifestations of life can only arise from the harmonious performance of all the functions of the body. This is true from the lowest forms of life up to that complex and wonderful creature—MAN.

Just now, when confronted with war and its accumulated horrors, we must use every effort to throw off the grip which it insidiously and gradually gets upon our nervous systems, destroying the harmony of the millions of little cells which go to make up our bodies.

If the balance and harmony are once destroyed, our digestion weakens. This robs the body of nourishment and is followed by general loss of strength. The heart muscle suffers consequently, grows weak. When this pump fails to send the exhausted blood cells through the lungs for purification and recharging, the physiological process fails in its purpose.

The break-up of the general balance and harmony causes the body to lose its resistance to disease germs. The result is general weakening of the individual and often death.

Today we cannot fail to feel our great responsibilities and our obligation to make sacrifices for that which gave us our national pride and freedom. At the same time however, we must be careful not to disrupt the harmony of our social and daily occupations, unnecessarily.

If war be long-continued it may be that a governmental state may occur in which our occupations will have to be changed: giving the easier vocations to the weak and shifting those that are more laborious to the strong. These changes, however, can be affected at the present time more easily than ever before in the history of the world, because of the great variety of modern occupations which permit of selection to accommodate different capabilities. Whatever the disturbance may be, we must keep busy and not think too constantly of "what might happen," so destroying that balance and harmony necessary for health.

FOODSTUFF IN WAR TIME.

Food makes the sinew of war.

During the activities of such a war as the world is now experiencing, millions of men and women are engaged in manufacturing munitions for every requisite of warfare, both on land and on water.

Food supplies are the very sinew of war and therefore the guarding of meat, milk, vegetables and grain becomes one of our imperative measures of defense.

Unfortunately, at the present time more than ever before in the history of the world, our people are restless and demand entertainment. Today, they do not as in former times, make their daily occupation their play. For this reason they flock to the centers of population to be amused by various forms of entertainment, robbing the farms and gardens of our country. This we can ill afford at a time like the present.

No one can guess the length of time the United States of America will be obliged to protect herself from foreign interference with her national rights. Today, therefore, is the time to begin to economize in the use of foodstuffs, whose waste is sin.

Gardening and farming furnish health, and profitable activities for women. If the idle women, and those who simply to pass the time engage in sports of various kinds, would spend this time in useful occupations, such as gardening, they would profit physically, mentally and morally, and aid their country inestimably.

This is a time for influential leaders of society to make gardening and farming fashionable among those of frivolous habits. Competitive farming and gardening among women would help to maintain their health and in many cases to make the weak strong. With better health they would find the burdens of life lighter and the nation would be appreciably stronger.

Before the era of apartment houses, almost every family had the facilities for making its own little garden, to produce at least a part of its daily food.

Moderation, co-operation, and the recognition of the necessity for sacrifice on the part of men and women in all classes of society, is the great present need. They must become producers or continue to be burdens on the country in which they live.

A spade, a rake, a hoe and a weeder are all the tools needed to cultivate vegetables in our yards, or on the roofs of our flats.

Our war has been declared just at the proper season to start our gardens. With intensive gardening, even those who never before gave any thought to the subject, will be surprised to find how much a small plot of ground will produce.

INDIVIDUALISM.

When we talk about representative government and the health of our people, we seldom think of our individual parts in the responsibility and efficiency of our Government and its every act.

We are all highly critical of the manner in which our municipalities, state and federal departments are conducted, without a blush for our own failure to engage individually in governmental affairs and to direct them as they should go.

Most of us,—from the time in the morning when we start to look after domestic affairs and those concerning our business or profession, until the day's end,—consider no efforts too great to secure efficiency. The large majority of our voters, however, never stop to weigh earnestly, day by day, the acts of public officials. If we did so, when the time came for nominating officials we would have a record of the men entrusted to take care of our affairs. It is rare to meet men at the polls who can intelligently analyze the characters of those who are to be voted for and entrusted with the care of our lives, our health, our personal and real property and the use of our money, paid over to them in the form of taxes for the upkeep of the things necessary in higher civilized life.

In voting for public officials we should be as careful as we are in selecting banks in which to deposit our earnings.

Concern as to the manner in which our Government is conducted, should occupy some part of each day of our lives, that we may keep in touch with public life as we do with our every day affairs at home and in business. If we neglect to play a part in our Government, it will soon become empirical or run by a few who take but a selfish interest in our affairs.

This same individual indifference toward our duties as members of a representative form of government, is comparable with our neglect of individual health. We rise in the morning, formulate our daily work and look after our social, business or professional duties; but we give little or no attention to the sanitary condition of our homes and the proper treatment of our physical and mental bodies with a view to high efficiency.

Now, in the time of war, let each one of us stop, deliberate and take thought as to the necessity of keeping his body, physically and mentally, in the very highest state of health. It is the sum of the strength of individuals that represents the strength of our Nation.

DRESS.

Unquestionably, Eve was the first human being to concern herself with the matter of costume.

Today, notwithstanding some evidence to the contrary, the primary object of clothing is to protect the body from heat and cold. Man's dress through all ages has of necessity conformed more or less to these practical purposes. True, there have been certain butterfly stages when man's costume competed in elegance and costliness with that of the women of any period, but within the last hundred years the great economic change which has come over a large portion of the world has brought with it a practical standardization of men's dress.

Women's clothing has been and continues to be subject to far greater extremes. It would be most undesirable to take beauty and color out of our lives, but for the sake of the wearer's health, certain reasonable precautions should be observed.

For example, paper soled slippers worn in mid-winter over icy pavements,—as contrasted with necks muffled in fur,—are obviously dangerous as well as ridiculous.

The growing army of women in business, whose occupation demands a more reserved style of dress, will in time exert an influence upon their sisters whose chief aim is personal adornment.

THE EYE AND ITS DANGERS.

If mankind were suddenly to lose its eyesight the race would die. No one can review the ordinary acts of his daily life without a realization of the indispensable part played by the eye in the performance of all of our acts—from the most ordinary to the most important.

The eye is one of the most complicated of organs, and at the same time one of the most exact pieces of animal mechanism that exists. It is much exposed to injury through wounds or by the germs of disease.

Man is not as dependent upon his hands as are the monkeys in the wilds of their native forests, where they travel about by swinging from limb to limb by their hands and tails. If, however, we take account of our daily movements we will realize that our hands are kept busy during our working hours.

To open a door we catch the knob with the hand. To climb into a trolley car we grasp the rail with the hand. These acts and a hundred others like them, thousands of people are performing every moment.

Some of these persons suffer with chronic infectious diseases of the eyes and may, for instance, be on their way to the hospital, not having been instructed as to the character of the malady. Perhaps the sufferer on your car has been wiping his eyes with his hand and has helped himself into the car with the germs of disease upon his hands just previous to your catching hold of the same rail. The only further step to infect yourself with the same disease is to rub your eyes with the hand that has been on the rail.

Notwithstanding this daily danger we constantly see people rubbing their eyes with unclean hands or gloves. If the readers of this "talk" will observe the warning contained herein, many cases of diseased eyes may be avoided.

Needless to say, car rails are not the only means of communicating infection in this way. There are hundreds of others.

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1.	July.	1909.	The Disease-Breeding Power of House-Flies; Method of Prevention.
2.	Aug..	1909.	Note on the Similarity of Barium Carbonate Poisoning and Rabies in Dogs.
3.	Sept..	1909.	The Family Physician.
4.	Oct..	1909.	Legal Rights and Tuberculosis. The Public Drinking Cup.
5.	Nov..	1909.	The Germicidal Effect of Water from Coal Mines and Tannery Wheels upon Bacillus Typhosus, Bacillus Coll, and Bacillus Anthracis.
6.	Dec..	1909.	Report on the Effect of Repeated Injections of Products of the Tubercle Bacillus on Lymphatic Organs.
7.	Jan..	1910.	Little Dangers to be Avoided in the Daily Fight against Tuberculosis.
8.	Feb..	1910.	The Object to be Attained by the Medical Inspection of School Children.
9.	March.	1910.	Conservation of Human Life in Pennsylvania. The Results of Four Years' Work of the Department.
10.	April.	1910.	The Biological Treatment of Tuberculosis as Conducted by the Department.
11.	May.	1910.	The Bubonic Plague. Its Origin, Progress, and Means of Prevention.
12.	June.	1910.	A Retrospective Glance. 1. Susceptibility to Tuberculosis. 2. Purity of Milk. 3. Bovine Tuberculosis.
13.	July.	1910.	Experiments on Tubercle Bacilli, Old Tuberculin, and the Fluid of Dixon.
14.	Aug..	1910.	The Conservation of Child Life in Pennsylvania.
15.	Sept..	1910.	Obedience to Nature's Laws the Primary Defence against Disease.
16.	Oct..	1910.	The Conservation of Infant Life in Pennsylvania.
17.	Nov..	1910.	Pennsylvania's Standing Army of Health.
18.	Dec..	1910.	Producers and Consumers. Pennsylvania's Tuberculosis Schools.
19.	Jan..	1911.	The Effect of Injections of Taurin upon Tumors of Mice and Dogs.
20.	Feb..	1911.	Some Duties, Ideals, and Opportunities of the Country Doctor.
21.	March.	1911.	Malaria: How it is Caused, and How to Get Rid of it.
22.	April.	1911.	Health.
23.	May.	1911.	The Common Fly. How it Develops. Why it must be Destroyed, and How to Destroy it.
24.	June.	1911.	Effects of Products of Tubercle Bacilli on Epithelium.
25.	July.	1911.	Five Years of Tuberculosis in Pennsylvania.
26.	Aug..	1911.	Organization of the Pennsylvania State Department of Health.
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30.	Dec..	1911.	Experiments Tending to Show the Infrequency of the Occurrence of Tubercle Bacilli in the Urine of Patients Suffering from Pulmonary Tuberculosis.
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Health Bulletin

No. 93

HARRISBURG, PA.

MAY, 1917

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**PUBLISHED MONTHLY BY
THE STATE DEPARTMENT OF HEALTH**

**SAMUEL G. DIXON, M. D., LL. D., SC. D.,
COMMISSIONER.**

INSECTS.

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INSECTS.

The Common Forms in Relation to Public Health and Methods for Their Destruction.

The relationship of insect life to public health has been clearly demonstrated by the transmission of the virus or germs of such diseases as malarial and yellow fever by the mosquito, typhoid fever, tuberculosis and intestinal disorders of infants by the common house fly, bubonic plague by the rat flea,—of which there are several varieties,—and the squirrel flea, of which there are several. There are numerous other insects which bear more or less direct relationship of a harmful character to the individual or to the individual's comfort or food and it is necessary to be informed as to the most convenient methods for their destruction.

In order that we may intelligently apply remedies and preventive measures, certain things are essential, such as the proper recognition and identification of the insect, a knowledge of its habitat and methods of reproduction and the method by which it transmits disease to human beings, showing its immediate relationship to the public health and comfort. The mosquito takes the gametes of malaria parasites into its stomach at the time of biting an individual already ill with malaria; from the mosquito's stomach the sporozoites developed from the gametes pass into its salivary glands and are injected into the blood of a new victim at the time of biting. Fleas, flies, ants and other insects spread infectious agents in two ways,

first, by mechanical conveyance of bacteria on their external parts and, second, by feeding on organic matter contaminated by bacteria which live for variable periods of times in the gastro-intestinal tract of the insect and are then deposited alive and virulent on the food of its victims or upon their skins. Bacteria on the external parts of the insect and in its dejecta when deposited on the skin at the time of biting, may be rubbed into the wound, causing local or general systemic infection.

With few exceptions, all germicidal agents are also insecticides. The most notable exception is formaldehyde which, though one of our most potent germicides, has little or no effect upon insect life.

It seems desirable, without going into the minutiae of prevention of insect depredations, to give a few brief directions concerning certain insecticide agents which possess the widest range of usefulness and are attended with the greatest economy and ease of application as well as maximum results. These directions will be taken up in the discussion of insects and the method of use of the insecticides outlined.

The use of sulphur is given in some detail on the last pages. Sulphur fumes are destructive for practically all insects.

THE MOSQUITO.

The insect family, Culicidae, has been fully considered in Bulletin 21 of the State Department of Health, Commonwealth of Pennsylvania, March 1911, but presentation of the following methods to prevent development in the various stages seems advisable in this Bulletin.

The campaign against mosquitoes should really be begun in Winter, as at this time the hibernating species are found in houses. Thorough screening of the house with netting or wire screens having 18 to 20 meshes to the inch, will keep the mosquitoes from getting indoors. Should mosquitoes get in through the opening of doors and windows, or through imperfect screening or absence of screens, their numbers can be reduced by the use of a paddle made of an oblong sheet of wire gauze, tacked onto a strip of wood of suitable size to serve as a handle. Daily persistence in this practice will destroy them all. In order to destroy them in the house, either in Winter or Summer, the mixture of carbolic acid crystals and gum camphor which is described under the subject of the House Fly, will be found effectual.

In large cellars several portions should be prepared at the same time, in order to secure equal distribution of the vapor and equal effect throughout the cellar. The smoke from smouldering pyrethrum paralyzes the insect but does not kill and as the stupified insects are difficult to find, this is but a palliative measure.

The burning of jimson weed (stramonium) and saltpetre is recommended. The space to be rid of mosquitoes must be tightly closed so that no fumes can escape for two hours. Three parts of powdered jimson weed mixed with one part of saltpetre is spread in a layer one-half inch thick, on a tin sufficiently large to hold all the mixture necessary; or several tins may be employed. The powder is then lighted in several places and the fumes will shortly penetrate the space, provided at least eight ounces of the mixture be used for 1,000 cubic feet of air space.

The mosquitoes found on the ceilings of bed-rooms in the evening may quickly be killed by means of a shallow tin cup or jelly-glass cover, nailed to the end of a stick and moistened inside with kerosene. This is placed under the mosquito which either falls into or flies against the oil and is killed.

Mosquitoes may be repelled by the burning of Chinese punk and by the less desirable application of equal parts of olive oil and oil of citronella to head, face, hands and ankles every half hour or so. Carrying naphthaline or tar camphor in the pockets is also of some use in keeping mosquitoes from the person. In case one is bitten by mosquitoes the best antidotal application is a diluted solution of ammonia water applied to the bite as soon as possible. However, the most satisfactory means of fighting these insects are those directed to the destruction of the larvae and abatement of the breeding places.

Since the mosquito does not fly more than one-half mile from its breeding-place and apparently only rarely as far as this, it is practically possible for any locality to free itself by bringing about a crusade against the mosquito within its own territory and for one-half mile around the same. The transference of mosquitoes by winds over longer distances may occur and can not be prevented.

Many and sometimes all of the most extensive mosquito breeding areas in or around cities and towns or in a given locality, are so situated that in the course of local improvement they will be done away with through grading or drainage. In the meantime such places are both nuisances and menaces to health; hence every effort should be made to have areas drained or filled in, as the condition may demand, as soon as possible. Should filling in be necessary, much can be accomplished by securing the co-operation of all parties who have ashes or dirt to dispose of and by diverting this material to the mosquito breeding areas to be filled. When the filling in

is started the material should be delivered so that the edge of the pool will be the first portion to disappear under the filler. Further material should be added in such a way that the entire pool will be obliterated in the shortest possible time, which means that the material is to be spread out to such a depth that there will be no chance for pools to form. Until such permanent abolition can be secured, kerosene (one ounce to every fifteen square feet of surface) should be applied. In this proportion all larvae and pupae will be effectually destroyed, with the additional advantage of killing the females when they alight to deposit eggs. Usually, an application should be made once each month, though its more frequent use may be advisable under certain conditions. It is more evenly distributed if placed in the water a short distance from the shore line.

Barrels for rain water, if not screened and if provided with outlets at the bottom, may also be treated with kerosene. All standing water should be similarly cared for.

In order to more completely do away with mosquito breeding the co-operation of every householder must be engaged and tenants must be directed either to remove all standing water or to screen it so completely with cheese cloth or other material that mosquitoes will be effectively kept from getting at the standing water.

THE COMMON FLY.

The House Fly (*Musca domestica*) has been fully considered in Bulletin 23 of the State Department of Health, Commonwealth of Pennsylvania, May 1911. The following methods to prevent development in the various stages and for the destruction of the fly itself seem suitable for presentation in this Bulletin.

The breeding places should be eliminated. The larvae or maggots should be destroyed and the fly should be excluded from homes, markets, etc., and all flies not excluded should be destroyed.

Horse manure bears nearly the same relation to the House Fly that stagnant water does to the mosquito. For this reason, it should be carefully collected in a common receptacle which should be thoroughly screened and made fly-tight in order to prevent egg-laying. The same screening protection or destruction of all garbage, filth and decaying matter of every kind should be made.

Drains and alleyways should be kept clean and free from any of the materials in which flies breed. No privies or closets accessible to flies should be contened. If in existence they should be screened. Fresh unslaked lime or kerosene should be poured and spread freely in the privy vaults. The excreta from persons suffering from intestinal diseases should be carefully disinfected immediately on discharge from the body.

All garbage, slops and waste should be kept carefully and tightly covered until removed and destroyed and when taken away the container should be cleaned immediately after the removal of the contents and re-covered or inverted. The container should be elevated a foot or more above ground. The ground contiguous to such containers should be treated with unslaked lime or kerosene.

Cuspidors, especially those filled with sawdust, are very insanitary. All those permitted to be used should contain a 5 per cent. solution of carbolic acid or equivalent cresol preparation, should be cleaned every day, using one of the following disinfectant solutions: Add one-half ounce of chlorinated lime (chloride of lime or bleaching powder) to one gallon of water; or three teaspoonfuls of creolin, or eight teaspoonfuls of a solution of formaldehyde—(at least 37½ per cent. of gas, in solution)—to one pint of water. The solution of formaldehyde is preferred.

The importance of dead or decaying wood or trees has always been overlooked. Flies frequently breed in the crevices; any of the last three named solutions may be sprayed (by using a pump spray atomizer) into such openings.

Flies should never be allowed to settle on food of any kind. All kinds of foodstuffs exposed for sale are potent sources of danger as they are likely to be contaminated by flies which have walked or fed on sputum expectorated on the sidewalk.

Great care should be taken to have all houses screened before fly time arrives and screening should be maintained carefully until winter time. Persons ill with infantile paralysis, typhoid fever, scarlet fever, small-pox, pneumonia, diphtheria, measles and tuberculosis should occupy screened rooms and flies found in the sick room should be immediately destroyed and never allowed to escape. Houses within flying distance of a railroad should be especially well protected as flies contaminated with excreta from passing trains may gain access to the kitchen or dining room.

All milk, especially the baby's milk, the baby's bottle and the baby's bed should receive the same protection, care and attention.

Among the various methods suggested for the destruction of flies, the following will give maximum results:

A piece of wire gauze, eight inches long and five inches wide, tacked to a wooden handle about fourteen inches long, makes an effective beater for striking and killing.

Pyrethrum powder heated in a pan or on hot coals, so that it smoulders but does not burn, will give off a dense white smoke that paralyzes flies but is otherwise harmless; one ounce to every 1,000 cubic feet of air space should be used and the flies promptly swept up and destroyed. The best results are obtained if the room is darkened, leaving only a ray of light to enter at the window shade, as under these conditions flies usually accumulate on the ceiling where the maximum effect of the smoke is felt.

The value of sticky fly-paper and fly-traps is known universally by housekeepers. There are perhaps no other agents equally useful for the purpose.

Formaldehyde added to sweetened water and placed in open saucers about the house or in saturated sponges in shallow dishes, may be tried.

The formaldehyde solution should be added to the sweetened water in the proportion of a tablespoonful to the pint of water. The liquid formaldehyde as sold in the drug store should contain 37 per cent. of the gas.

The fly may be attracted by sprinkling a little sugar on the dish containing the liquid.

An excellent solution is prepared by adding one dram (one teaspoonful) of bichromate of potassium to two ounces of water; or if a larger quantity is desired, 1 oz. to 1 pint of water, which has been sweetened with sugar. This, placed in shallow dishes throughout the house, will not harm children should they get hold of it. It is a cheap solution and may be obtained at any drug store.

Cobalt chloride in the strength of one dram to 6 ounces of sweetened water is just as effectual, is non-poisonous but is more expensive and much harder to obtain.

Another efficient method is by using a mixture of equal parts (by weight) of carbolic acid crystals and gum camphor. Liquify the carbolic acid crystals by gentle heat, break up the gum camphor into small pieces and pour the liquid acid slowly over the camphor. The acid will dissolve the camphor completely and the resulting liquid is permanent and only slightly volatile at ordinary temperatures. It volatilizes rapidly, however, in a shallow tin over the flame of an alcohol or other lamp and the vapor is death to flies. Three ounces will suffice for one thousand cubic feet in a tightly closed room and

it will require about half an hour to evaporate that amount. The vapor is not poisonous to man and is not destructive to materials or fabrics. It is not explosive but is inflammable and should be used with that fact in mind.

Disposal of Manure in Rural and Suburban Districts.

Manure should not be allowed to remain in one place unless it be properly screened or treated chemically to destroy house-fly larvae.

If for any reason it cannot be promptly spread on the fields and turned under ground, it should be treated with either powdered hellebore or borax. The former should be used in the strength of a half pound of the powder to every ten gallons of water. After stirring it should stand for twenty-four hours before being used. The mixture should be used at the rate of ten gallons to eight bushels of manure.

Commercial borax is also an effective remedy. It may be used at the rate of one pound to sixteen cubic feet of manure. It can be applied in solution or scattered evenly over the manure and then sprinkled with water. Hellebore is not injurious to vegetables when it is in treated manure but borax should not be used stronger than recommended as it may injure certain vegetables when the manure is used as a fertilizer.

In order to avoid destruction or injury of the fertilizing qualities of manure while treating it to prevent fly breeding, considerable experimentation has recently been carried on.

The United States Department of Agriculture, after experimentation with various plant infusions and other substances including sulphur, had no results as satisfactory as the hellebore and borax treatments, except with a mixture of common fertilizer ingredients used in making artificial fertilizers. These ingredients are calcium cyanamid, acid phosphate and kainite and they are used in the proportion of two pounds of acid phosphate, 1 pound of calcium cyanamid and one pound of kainite to four square feet of exposed manure in boxes or pits. Naturally, the economy of the different processes will have much to do in determining a choice.

Things to be Remembered for the Prevention of Flies.

First: Flies can only breed in filth of the kinds mentioned and their presence is evidence that such material is at hand.

Second: They carry germs of disease on their hairy bodies and legs.

Third: Keep them away from the sick, particularly those suffering with communicable diseases.

Fourth: Do not allow them to settle on the mouth, eyes, ears or nostrils of infants.

Fifth: Do not permit them to come in contact with food of any kind or to settle on the milk bottles of infants.

Sixth: Open privy wells or cesspools are particularly dangerous. Sanitary closets should be used, with self-closing seat covers and fly-screened openings.

Seventh: Uncovered or unscreened garbage cans and open drains should not be permitted.

Eighth: Physicians should see that the excreta of all persons ill with intestinal diseases are disinfected and cared for in accordance with the regulations of this Department.

Ninth: Manure should be collected twice a week and plowed into fields or stored in fly-proof receptacles.

FLEAS.

These insects, whose zoological classification has placed them among the Siphonaptera, number in kind over one hundred, all of which live on mammals and birds. Their importance in transmitting disease has been demonstrated in the studies of bubonic plague in California and Washington and also in India. This disease appeared in the United States in 1900 causing 113 deaths in 119 cases; in 1907-1908 there were 77 deaths in 159 cases. The common means of transmission was found to be by means of rats, mice and ground squirrels and the transmitting medium between these affected animals and human beings was a species of flea, designated as *Pulex fasciatus* and also called *Loemopsylla cheopis*.

The flea is a wingless, parasitic insect having a laterally compressed body of a dark reddish color and legs specially designed for leaping. It is provided with a puncturing and sucking apparatus with which it imbibes blood and lymph from its victims. It mostly infests warm blooded animals. It is a common opinion that each species of mammal has its own peculiar flea and while a great many different varieties have been described, some of which are peculiar to certain mammal forms, one species of flea may infest a great many different species of mammals, passing rapidly from one animal to

another. The common forms which trouble American homes are the House Flea (*Pulex irritans*), the Cat Flea (*Pulex felinis*) and the Dog Flea (*Pulex canis*).

Each female deposits from eight to twelve whitish, ovoid eggs, the favored place being in dust or lint, under carpets and in the larger crevices of wood work. In Summer time the larvae issue in four to six days, passing into the pupal stage eleven days later. About twelve days later they become adult fleas; hence the time for development is about four weeks. In the Winter it usually averages about six weeks. As a rule four to six broods from each female are hatched out during each Summer season.

The House Flea, as indicated by its name, occurs principally in human habitations, secreting itself in bedding, clothing, carpets and window hangings, from which it attacks its human victim, especially at night. It is distributed widely and sometimes becomes a serious pest, in spite of the most rigid cleanliness. Well defined flea pests have occurred, especially in certain sections of Philadelphia. The Cat Flea and Dog Flea rival the House Flea and though they usually adhere closely to their particular hosts, are frequently as troublesome to human beings as is the House Flea.

Old floors, mattings and carpets favor their development as the young larvae easily penetrate the crevices and interstices where undisturbed development takes place. Places frequented by them should be thoroughly cleaned, using boiling hot water and kerosene mixed with cresol preparations, or dusting freely with pyrethrum powder, especially in the crevices and openings where dust and dirt may be lodged. In the adult stage fleas are more difficult to destroy, even with the persistent use of pyrethrum. Kerosene however is immediately destructive; or the free sprinkling with gasoline or benzine may be tried. All carpets and hangings should be removed and cleaned and all surfaces should be scrubbed thoroughly with hot soap suds.

On animals they are readily stupified by dusting pyrethrum powder into the hair. The fleas will fall off while stupified and should be immediately swept up and burned. Resting or sleeping places for infested animals should be carefully provided with straw matting or pieces of carpet, as they can be readily shaken into the open fire and the eggs, larvae and fleas with which they are usually covered, destroyed by fire. Dogs should be washed with carbolic or cresol soaps, using a thick lather freely applied. Liquor cresolis comp. is a suitable preparation.

There is large difference in the liability of different individuals to flea bites and marked variability in the results. One victim may totally escape; another may have slight temporary discomfort;

while others suffer severely. Scratching the bites, with secondary infection of the wounds, has caused serious consequences. The best antidote for a bite is some alkaline wash, such as ammonia water: other lotions may be used to relieve the local itching and distress and to act as antiseptics to prevent secondary infection. Such lotions may be made up of a 5 per cent. solution of carbolic acid in water or the same solution containing menthol; or a 5 per cent. solution of menthol in alcohol. Aromatic Spirits of Ammonia to which menthol to the amount of one per cent. has been added, is useful in allaying pain or itching from insect bites.

CAUTION: Benzine and gasoline are highly inflammable.

COCKROACHES.

These insects, of the family Blattidae, number nearly a thousand in variety of species. Very few species, however, live in association with human beings. The common variety in Pennsylvania is the American roach (*Periplaneta americana*) and the "black beetle," (*Blatta orientalis*) which are common in many kitchens. The American roach is uniformly of a dark brownish color, broad and flattened in shape, and hard and smooth to the touch. The young are much like the adults. The latter are hatched from eggs, which are contained in a horny capsule, deposited by the mother in the darkest places of concealment which can be found. On hatching, the young are often brooded by the parent during the earlier weeks of life. They pass through a variable number of molts before reaching the adult stage. The length of life is long and in some species is said to be four or five years. It is likely that not more than one brood is developed each season, and then only during the warm weather, as they are particularly sensitive to cold.

In houses, roaches are particularly abundant in pantries, kitchens and in the walls near stoves and fireplaces. They are often abundant in oven rooms of bakeries or wherever the temperature is maintained above normal. During the day they conceal themselves wherever protection from natural enemies and from light is afforded. Because of their shape, they can squeeze into very small crevices. When surprised, they seek shelter with a scurrying gait and usually escape capture or destruction.

They are practically omnivorous, feeding on dead animal matter, cereals and any form of food materials; they also eat woolens, leather, the cloth and leather bindings of books (because of the paste) and occasionally turn cannibal.

If there were no evidence to indicate that they transmit disease, the soiling and rendering nauseous of everything with which they have contact makes their destruction a matter of public comfort. However, they are potential carriers of pathogenic bacteria to exposed food and doubtless convey several diseases in this way. They give off a fetid, nauseous odor which persists after most persistent cleaning. Food supplies are tainted, shelves and dishes stained and the atmosphere made almost unbearable, which in part is from excreta but for the most part from an oily liquid secreted in the scent gland and a dark colored fluid from the mouth.

It is difficult to get rid of these pests. They have few natural enemies, an ichneumon fly and the tree frog being the only ones known. They readily detect poisoned foods, avoiding arsenic and other common poisons. The smoke of pyrethrum powder (described under The House Fly) will paralyze but not kill them. Flowers of sulphur dusted along the baseboards repels them, as also does phosphorus. The latter, of 1 to 2 per cent. strength, made into a paste with sweetened flour, will destroy many; to make the paste take one-fourth teaspoonful of phosphorus, two level tablespoonsful of flour, mix and make into a paste with well-sweetened water. The fumes of bisulphid of carbon in the proportion of one pound to 1,000 cubic feet of air space (if the room is sealed) will destroy every roach. As this is an explosive in the presence of fire, great precaution is necessary.

A food prepared by taking one part of plaster of Paris and three or four parts of flour in one saucer, with plenty of water in another saucer and bridged for easy access, makes a simple remedy. The insects readily eat the mixture and drink freely. The plaster sets and clogs the intestines. The dead bodies disappear, in all probability being eaten by the survivors. Finally, ingenious traps have been contrived, the simplest of which is the use of a quart fruit jar. The jar is partially filled with stale beer and inclined so that it is easy of access but prevents the roach from escaping. A rough stick leaned against the opening, serves as a gang-plank. Once in the jar the insects perish or are easily destroyed.

CAUTION: Phosphorus is very inflammable and very poisonous.

THE BED BUG.

(*Acanthia Lectularia*). (*Cimex lectularius*).

The bed-bug is a small but plainly visible ovoid shaped bug having a peculiarly disagreeable color. It is of a reddish brown or rusty color, with some black coloration on the abdomen and is provided with a puncturing and sucking apparatus. The young is similar in all details to the adult. The eggs or nits are small white oval objects which are laid in batches of from 6 to 50, in cracks and crevices of furniture, walls or floors. There is an average hatch of several batches during each season and it takes from seven to eleven weeks for development from the egg to the adult stage. There is a wide variation in the egg laying and hatching, dependent on weather conditions, but it is customary to look for a new brood about every eleven weeks. However, it has no fixed period of the year for its development, generations succeeding one another as long as the temperature is sufficiently elevated. During cold weather the insect merely becomes stupefied. This hibernation occurs in different places of concealment where large numbers congregate until the return of warmer conditions.

It is peculiar to the habitations of man. Nothing is really known as to the origin of this insect but it is very widely distributed. Other species of the same family are said to frequent birds, particularly the common chimney swallow, pigeons and bats and they are very similar to the common bed-bug.

It is nocturnal in its habits, seeking its place of concealment during the day. It normally feeds on human blood but there is some evidence that it can feed on foods similar to those used by other insects. It thrives particularly well in filth and old houses and has been kept alive without food for one year.

It is said to be instrumental in transmitting certain contagious diseases and there is some evidence that small-pox has been so communicated. Drs. Smith and Dixon conducted investigations in the Laboratories of the State Department of Health of the Commonwealth of Pennsylvania in 1905, seeking to determine whether or not bed-bugs transmitted smallpox. The possibility of bed-bugs conveying relapsing fever, typhoid fever and leprosy has been suggested and in the case of relapsing fever has been practically established.

The bite is distinctly poisonous to many individuals, resulting in a local inflammatory reaction. This is probably due to the same secretion which gives the characteristic odor.

On account of the places of concealment in the floors and walls the bed-bug is not reached by ordinary measures; on brass and iron bedsteads it is easy of access, while it is somewhat more difficult in old wooden bedsteads and at times it is impossible to destroy it or the eggs in the crevices of old walls and floors. In order to effectually get rid of this pest, it is necessary to establish a vigorous campaign with daily inspection and destruction of all of the eggs as well as the bugs which may be found.

For use on bedsteads and available crevices one of the best measures is hot water. A practical treatment is to make liberal applications of benzine, gasoline or kerosene, either used alone or made up according to the following formula.—

*Oil of mirbane, $\frac{1}{4}$ ounce,
Crystallized Carbolic Acid, $1\frac{1}{2}$ ounces,
Kerosene (or Benzine), 32 ounces.

Add the oil of mirbane to the kerosene; stirring slowly; liquify carbolic acid crystals by standing container in hot water. Then add to the mixed oils, stirring rapidly.

This mixture should be introduced into all crevices with feathers, small brushes or small spray syringe, as a rose bush syringe, which may be purchased at a seed store. A cheap atomizer gives very satisfactory results.

For use in mattresses and beds the following may be used:—

Sodium Chlorid (common salt), $\frac{1}{2}$ ounce.
Bichloride of Mercury (corrosive sublimate) $\frac{1}{2}$ ounce,
Water, 2 ounces,
Alcohol, 2 ounces.
Spirits of Turpentine, 6 ounces.

Gasoline used by atomizer or by direct application, is readily obtained and applied and is perfectly satisfactory, having always in mind its explosive and inflammable properties.

CAUTION: These preparations are *poisonous* and *inflammable*. No open lights or flames should be permitted in the room.

Pyrethrum, either as powder or in decotion, is practically of no avail. It forms the basis of most of the patented bed-bug “exterminators.”

In rooms containing books or where liquid applications are inadvisable, a thorough disinfection with sulphur is an effective means of destruction, the method of which is described in detail on the last pages.

To secure permanent results sulphur fumigation must be repeated to destroy successive broods of insects, hatched subsequent to room fumigation, from eggs present in the walls, wood work and crevices.

*Oil or essence of mirbane is poisonous. It is nitrobenzine or artificial oil of bitter almonds.

HOUSE ANTS.

(Monomorium Pharaonis).

There are a number of species of ants which infest our homes but the chief offender is the small red ant which passes its entire existence in houses. The larvae and pupae (commonly called the "eggs") are minute, whitish, oval objects which are produced in enormous numbers by the solitary queen-mother. They are deposited in the walls or under the flooring only during the late spring and the summer months.

The ant is not inimical to health nor is there evidence at present that it acts as a host to transmit the cause of disease. Its chief claim for consideration and destruction is its mere presence in articles of food, particularly sugar, preserves, and other sweets. When one ant has discovered such foods, the news is quickly spread and soon the supply is covered or filled with an entire colony.

In order to get rid of such invaders it is of first importance to keep food products in tight receptacles and to remove sugar and sweetmeats scattered by children. Several methods to destroy them have been suggested, and as temporary measures, when the nest cannot be located, the following may suffice:

Moisten a sponge with sweetened water; when filled with ants, drop into boiling water.

An ingenious method has been described as follows: A groove large enough for the passage of a single ant, is made in an ordinary cork. The bottle is partly filled with sweetened water and a thread moistened with the preparation passes from the floor to the passage through the cork. When the ant within the bottle is once gorged with food he cannot get out. Thousands may be trapped in this way. Several of the traps may be prepared and enough time allowed to elapse for the ants to swarm into the openings.

However, the only thorough extermination is the destruction of the colony and its nest. There is no means of locating the latter, except by following the ants back to their point of disappearance. Bisulphid of carbon in liberal quantities (about two ounces) is then poured into the region of the nest. This substance is so penetrating that its work is thorough, if the nest is properly located.

The small black ant (*Monomorium minutum*) and the pavement ant (*Tetramorium caespitum*) sometimes become house nuisances, though the colonies are under stones, in the ground and under pavements. The latter are recognized by the small pyramids of grains

of earth which surround the excavations. The destruction of the colonies by kerosene or carbon disulphid usually exterminates these species.

CAUTION: The fumes of bisulphid of carbon are explosive in the presence of any fire or open flame. Care should be taken that none are present where this chemical is used.

LICE.

The importance of the louse as a disease transmitter has been demonstrated in recent investigations of tabardillo, (Mexican typhus fever), which is also known as American typhus fever. In studying the identity of this disease with Brill's disease, it has been shown that "the body louse is probably the *usual* distributing agency" and the head louse is also believed to be an agent.

These parasites belong to the class insecta, family Pediculidae, and pass the whole of their existence on the mammalian forms. Very few of the species are ever found upon other species of animals than those which they normally infest. Those infesting man are approximately one-tenth of an inch in length and can be readily found on close observation of the scalp or clothing. They are rarely found on the uncovered skin. It should always be borne in mind that lice must grow from eggs laid by an adult louse and can never originate from filth or other matter. They hatch out within a week and the young are competent to reproduce in less than two weeks. A single adult female is capable of producing a progeny of 5,000 within eight weeks.

The annoyance and inconvenience of their presence may be the only ill result, but in many individuals this leads to sufficient nervous irritation to cause ill health. Scratching, with secondary infection, especially in children of low physical resistance, has led to serious consequences. Such an occurrence in Pennsylvania on three members of one family led to a temporary diagnosis of smallpox, causing in addition to the illness, great social and domestic inconvenience, mental distress and interruption of education.

While the symptoms caused by lice are much the same in the three varieties described below, they are somewhat influenced by

the locality invaded and hence the three types are best described separately:

THE HEAD LOUSE. (*Pediculus capitis*).

These forms are grayish in color with blackish margins but after feeding may be of slight or decided reddish tinge, due to imbibed blood. The ova or "nits" are found attached to the hair shafts on the scalp at some distance from the head and are minute white or grayish pear-shaped bodies, visible to the naked eye.

TREATMENT. It is desirable to destroy both lice and nits in as short time as possible. For this reason the following treatment is recommended: Wet the hair thoroughly with crude petroleum, which may be obtained at any drug store. Keep it wet for three hours, then wash the whole head with warm water and soap. Repeat this process on three successive days. The nits may then be removed by combing the hair very carefully with a fine tooth comb wet with vinegar. If there is no objection, treatment is made easier and more thorough by cutting the hair short. All persons in a family are likely to be afflicted, hence every member should be treated as above. Brushes and combs should be cleansed (before and after using) by putting them in boiling water for a few minutes. Equal parts of commercial ether and tincture of larkspur make an effective head cleanser. Kerosene is likewise effective.

THE CLOTHING OR BODY LOUSE. (*Pediculus vestimenti*).

This parasite belongs to the same family as the head louse but it is somewhat larger and is found commonly on the body, where it goes for the purpose of feeding only. In the adult form it can be differentiated from the head louse by dark transverse bands across the back. Reproduction for the most part occurs in the various folds and seams of the clothing; however, it has been observed that some of the ova or nits are attached to the fine hairs (lanugo) of the body surface.

As the parasites live in concealed portions of the clothing and especially where the skin is most conveniently reached, the various lesions are to be found most often on those parts; such as around the neck, across the shoulders, the upper part of the back, around the waist and on the outside of the thighs.

Treatment should be directed to the infested clothing where the parasite and nits are to be found. All garments should be thoroughly baked, boiled or gone over with a hot iron in order to destroy them.

However, a general tub bath of corrosive sublimate, is advisable because of the nits which are attached to the finer hairs; eight tablets of bichloride of mercury, 7.5 grains each, to a tub of water makes a strong enough solution for this purpose. In all cases soap and water baths of the entire body, twice a day, should be insisted upon. Bathing with saponaceous solutions like lysol or liquor cresolis comp. is useful.

THE CRAB LOUSE. (*Phthirus inguinalis*). (*Pediculis pubis*).

This is a smaller species of the same family as head or body lice but is quite distinct on account of its shape, being nearly as wide as long. The strong legs, spread out laterally, give the lice the appearance of crabs. They are of whitish color, somewhat shaded on the shoulders and the legs are of slightly red tinge. Each is about one-tenth of an inch in length.

They are to be found on the various hairy regions of the body other than the scalp, but do not thrive among the fine hairs of the head, though they have often been observed in the eyebrows.

TREATMENT: Repeated washings with vinegar or diluted acetic acid will free the hairs of ova. This should be followed by careful daily shampooing of all the regions involved. After the shampoo a solution of corrosive sublimate containing one tablet of 7.5 grains to a pint of water should be freely applied. If not desirable to use the mercury wash, pure tincture of larkspur, or a lotion consisting of tincture of larkspur, $\frac{1}{2}$ ounce, commercial ether, 8 ounces, or a stronger solution, consisting of equal parts of the two ingredients may be used, afterwards covering the parts with a closely applied dressing.

Mercurial ointment is effective but dirty and unpleasant to handle.

A vinegar and kerosene mixture is also effective.

Liquor cresolis comp. in water, worked into a thick lather and freely applied, is useful. It should be washed off the skin before irritation and redness result. This precaution should be taken after corrosive sublimate solution applications, all kerosene applications and in fact all irritants.

CAUTION: Corrosive sublimate (bichloride of mercury) is a powerful poison; ether and kerosene are highly inflammable.

THE ITCH MITE. (*Sarcoptes scabiei*).

Infection by this mite (which really is not an insect) is so common that it is considered advisable to include it in this Bulletin.

The species of the mite which afflicts man (*Sarcoptes scabiei*) is the minute tick which gives rise to the condition commonly known as "Itch," "Seven Year Itch," "Army Itch," "Jackson Itch" and many other synonymous names. It has an oval body with marked spinous projections. The female is larger than the male and is 1-70 of an inch long by 1-50 of an inch wide. It is really the female alone which causes the phenomena which lead to its discovery; it burrows into the superficial skin forming a tortuous or, at times, a straight, dotted, slightly elevated line which varies in length from one-eighth to one-half inch. On close observation it will be seen that the burrow is dark gray or blackish in color, thread-like and it may be slightly more elevated at one end. It is in this that the eggs are deposited and the elevated end of the burrow usually contains the female, which in the vast majority of instances has already perished. As the mite extends its channel into deeper portions of the skin and as the eggs hatch, the young feed upon the surrounding tissues; when fully grown they wander out and mate on the surface of the skin, after which the females begin a fresh burrow. The ova hatch out gradually, taking an average of five or six days to reach the adult stage.

It is commonly transmitted from one individual to another either by occupancy of the same bed or of a bed on which the linens have not been changed. There is some reason to believe that it is transmitted by the use of the common towel and also by shaking hands. It is commonly found in the moist surfaces of the body, such as between the fingers, hands, folds of the wrist, in the folds under the shoulder, lower portion of the abdomen and about the neck. Its entire existence is spent on its human host. It is believed not to have any power to transmit disease but may be inimical to the health of the individual because of the secondary infection of the burrows caused by the mite and the excoriations produced by scratching. In addition to the injuries produced by scratching there are papular or pustular lesions of varying degrees throughout the affected regions.

Mites are usually better able to thrive in insanitary conditions. In order to destroy them, it is necessary to have all bed linens and clothing used by an individual already infected, thoroughly boiled or baked. If woollens are in use, they should be baked or thoroughly

ironed with a hot iron. The patient should have a hot bath and be rubbed down with a coarse wash cloth or brush which serves to open up the burrows and expose the eggs for destruction. After the bath an ointment should be rubbed in, made up after the following formula:

Sublimed sulphur—one dram (1 teaspoonful).

Balsam of Peru—one dram (1 teaspoonful).

Vaseline—one ounce (2 tablespoonfuls).

This should be repeated morning and evening for from two to four days. In particularly serious cases it may be necessary to repeat this entire treatment after the lapse of one week.

SULPHUR DISINFECTION.

Sulphur fumigation is most useful for the destruction of insects and vermin but when used for this purpose all rooms in the building should be disinfected simultaneously.

The room to be disinfected should be sealed with strips of gummed paper or strips of paper and home made flour paste, closing flues, chimney places and all visible cracks and crevices about the walls. Or the same openings should be stuffed or caulked with cotton by using a table knife.

Strip and take apart beds; stand mattresses on end; open closets, bureau drawers and trunks, spreading their contents about the room.

Fabrics, especially carpets, and bed and body clothing should be fully unfolded, suspended upon chairs, clothes lines and bedsteads,—exposing all surfaces to the fumes of the gas.

At least three pounds of flowers of sulphur should be used for every 1000 cubic feet of air space.

Bricks should be placed on edge in the bottom of a metal tub containing 4 inches of water. (Moisture is necessary to render the fumes of sulphur effective).

An old iron kettle or other vessel, in which the sulphur is to be placed, should then be set on the bricks.

The sulphur in proper proportion is then ignited by lighting a small quantity of alcohol which is placed in the center of the sulphur. A hasty exit should be made by the disinfector, after assuring himself that ignition has occurred.

The door is then to be sealed on the outer side and the room should remain closed for a period of at least twenty-four hours.

The room should then be opened and if possible should be thoroughly aired before it is again occupied.

CAUTION: It should be remembered that sulphur fumes will tarnish metals and are injurious to the coloring matter and tensile strength of fabrics. Metal fixtures which cannot be removed may be covered with a protective coat of vaseline or lard.

OTHER MEASURES.

In view of the enormous war time increase in the cost of many chemicals used as disinfectants and suggested in the foregoing pages, the question of expense just now takes on an unusual prominence. It seems wise therefore to call attention to the disinfectant, germicidal and larvacidal virtues of heat, especially as applied in the form of boiling hot water. Except for application to human tissues this agent (boiling water) has a wide field of usefulness, not properly appreciated. Steam and dry heat are also to be remembered and the actual flaming of surfaces, as with a gasoline torch, and the burning of kerosene on ground surfaces should be borne in mind as valuable methods in this time of exorbitantly priced chemicals.

As a substitute for pure phenol or carbolic acid we may use with great advantage one of the various crude derivatives from coal tar, rich in the mixed cresols and phenols. These are marketed under various trade names but have a similarity of composition, being generally made from coal tar liquid by-products with additions to render them saponaceous and miscible in water.

The efficiency as compared with pure carbolic acid varies from 2 to 10, which means that they are from 2 to 10 times as powerful germicides as pure phenol or (carbolic acid). They may therefore be used with confidence in solutions of from one-half per cent. to 3 per cent. Some of the trade names suggest through their first syllable the name "cresol" (the most active constituent in all of them). They are blackish-brown, syrupy preparations rich in cresols and phenols and are saponaceous from added (alkali) soap elements, so that upon addition to water a soapy emulsion results.

This mixture is readily applied by spray pumps, brooms, brushes or sprinkling pots and is less poisonous and less harmful to the hands than carbolic solutions or formaldehyde, while at the same time destructive to germ life.

The larvacide mixture used upon the Panama Canal Zone is a compound of this character and is made as follows: 200 pounds of finely crushed and sifted common rosin are dissolved in 150 gallons

of heated crude carbolic acid and 30 pounds of caustic soda, dissolved in 6 gallons of water, is added. Mechanical stirring and heat produce the finished product in a short time. The cost is much less than the cost of purified chemicals usually used as disinfectants or germicides and if made in quantity it is doubtless less expensive than the similar commercial products on sale. As a mosquito larvicide, for the prevention of fly breeding, the destruction of fleas, and as a general disinfectant and deodorant in privy vaults and similar places it is most valuable. It may be used mixed with water in varying strengths, applied by spray pumps, sprinkling pots or dippers or it may be used in small amounts in full strength for intensive disinfection. One barrel of the mixture would make 20 barrels of a 5 per cent. mixture—an average strength for general use. This larvicide and disinfectant mixture can of course be made in any amount. If an amount is desired less than that called for by the above formula, any fraction of all the above quoted amounts may be taken; as for example one-tenth.

PENNSYLVANIA HEALTH BULLETINS

1.	July.	1909.	The Disease-Breeding Power of House-flies; Method of Prevention.
2.	Aug..	1909.	Note on the Similarity of Barium Carbonate Poisoning and Rabies in Dogs.
3.	Sept..	1909.	The Family Physician.
4.	Oct..	1909.	Legal Rights and Tuberculosis. The Public Drinking Cup.
5.	Nov..	1909.	The Germicidal Effect of Water from Coal Mines and Tannery Wheels upon Bacillus Typhosus, Bacillus Coli, and Bacillus Anthracis.
6.	Dec..	1909.	Report on the Effect of Repeated Injections of Products of the Tubercle Bacillus on Lymphatic Organs.
7.	Jan..	1910.	Little Dangers to be Avoided in the Daily Fight against Tuberculosis.
8.	Feb..	1910.	The Object to be Attained by the Medical Inspection of School Children.
9.	March.	1910.	Conservation of Human Life in Pennsylvania. The Results of Four Years' Work of the Department.
10.	April.	1910.	The Biological Treatment of Tuberculosis as Conducted by the Department.
11.	May.	1910.	The Bubonic Plague, its Origin, Progress, and Means of Prevention.
12.	June.	1910.	A Retrospective Glance. 1. Susceptibility to Tuberculosis. 2. Purity of Milk. 3. Bovine Tuberculosis.
13.	July.	1910.	Experiments on Tubercle Bacilli, Old Tuberculin, and the Fluid of Dixon.
14.	Aug..	1910.	The Conservation of Child Life in Pennsylvania.
15.	Sept..	1910.	Obedience to Nature's Laws the Primary Defence against Disease.
16.	Oct..	1910.	The Conservation of Infant Life in Pennsylvania.
17.	Nov..	1910.	Pennsylvania's Standing Army of Health.
18.	Dec..	1910.	Producers and Consumers. Pennsylvania's Tuberculosis Schools.
19.	Jan..	1911.	The Effect of Injections of Taurin upon Tumors of Mice and Dogs.
20.	Feb..	1911.	Some Duties, Ideals, and Opportunities of the Country Doctor.
21.	March.	1911.	Malaria: How it is Caused, and How to Get Rid of it.
22.	April.	1911.	Health.
23.	May.	1911.	The Common Fly. How it Develops. Why it must be Destroyed, and How to Destroy it.
24.	June.	1911.	Effects of Products of Tubercle Bacilli on Epithelium.
25.	July.	1911.	Five Years of Tuberculosis in Pennsylvania.
26.	Aug..	1911.	Organization of the Pennsylvania State Department of Health.
27.	Sept..	1911.	Tuberculosis, in the Country as well as in the City, a Disease of Bad Housing and Lack of Nourishing Food.
28.	Oct..	1911.	The Preparation of the Biological Products Distributed by the Pennsylvania Department of Health.
29.	Nov..	1911.	The Foundations of State Medicine.
30.	Dec..	1911.	Experiments Tending to Show the Infrequency of the Occurrence of Tubercle Bacilli in the Urine of Patients Suffering from Pulmonary Tuberculosis.
31.	Jan..	1912.	The Baby the Most Important Problem in Modern Life.
32.	Feb..	1912.	Insects. The Common Forms in Relation to Public Health, and Methods for their Destruction.
33.	March.	1912.	The Opportunities for the Trained Nurse in Sanitary Service.
34.	April.	1912.	How to Organize a Baby-Saving Show.
35.	May.	1912.	Drowning.
36.	June.	1912.	The Health of Suburban Residences.
37.	July.	1912.	Report of the Austin Disaster.
38.	Aug..	1912.	Getting Close to the People. Caring for the School Children.
39.	Sept..	1912.	Modern Medicine and the Physician.
40.	Oct..	1912.	Battling for Health at Mont Alto.
41.	Nov..	1912.	Tuberculin.
42.	Dec..	1912.	Conservation of Health. An Address.
43.	Jan..	1913.	Municipal Sanitation.
44.	Feb..	1913.	Tuberculosis and our Schools.
45.	March.	1913.	The Relation of the Undertaker to the Public Health.
46.	April.	1913.	What State Control over Streams has done in Pennsylvania in Seven Years.
47.	May.	1913.	Troy Typhoid Fever Epidemic.
48.	June.	1913.	The Registration of Vital Statistics a Social Service.
49.	July.	1913.	Pennsylvania's Eugenic Marriage Law.
50.	Aug..	1913.	Pennsylvania Health Legislation of 1913.
51.	Sept..	1913.	Health and Education. An Address.
52.	Oct..	1913.	Relation of Public Health to Industrial Welfare. An Address.
53.	Nov..	1913.	Bathing.
54.	Dec..	1913.	Results from the Injection of the Wax of the Tubercle Bacillus indicating its Influence on Immunity and Susceptibility to the Tubercle Bacillus.
55.	Jan..	1914.	The Waters of Pennsylvania. An Address.
56.	Feb..	1914.	Reproduction and Race Betterment.
57.	March.	1914.	The State Tuberculosis Dispensary as a Social Service in Pennsylvania.
58.	Rev. Apr.	1914.	The Preparation of the Biological Products Distributed by the Pennsylvania Department of Health.
59.	May.	1914.	Insanitary Bath Tubs and Lavatories.
60.	June.	1914.	On Housing.
61.	July.	1914.	Medical and Sanitary Inspection of Schools of Fourth Class Districts in Pennsylvania.
62.	Aug..	1914.	Progress in Preventive Medicine in Pennsylvania since the Creation of a State Department of Health.
63.	Sept..	1914.	Certain Standards for Tuberculosis Dispensaries.
64.	Oct..	1914.	On the Upfollow of Sanatorium Patients.
65.	Nov..	1914.	Effective Rural Sanitation. End Results.
66.	Dec..	1914.	Pennsylvania's System of Tuberculosis Dispensaries.
67.	Jan..	1915.	Present Organization of the State Department of Health.
68.	Feb..	1915.	Notes on Typhoid Fever in Pennsylvania for the Past Nine Years.
69.	March.	1915.	Epidemic of Typhoid Fever in Skippackville and Vicinity.
70.	April.	1915.	Diphtheria and Diphtheria Antitoxin.
71.	May.	1915.	Flies as a Factor in Infant Mortality.
72.	June.	1915.	Pennsylvania Health Legislation of 1915.
73.	July.	1915.	On the Medical Inspection of 469,000 School Children in Pennsylvania.
74.	Aug..	1915.	The Sanitary Engineer in Public Health Work.
75.	Sept..	1915.	Quarantine of the Home as Practised by the Department of Health.
76.	Oct..	1915.	An Address before the Pennsylvania Water Works Association.
77.	Nov..	1915.	An Address at the Laying of a Corner-Stone in Pittsburgh.
78.	Dec..	1915.	On the Prevalence of Typhoid Fever in Philadelphia in the Autumn of 1915.

77. Jan., 1916, The Pennsylvania Department of Health Exhibit at the Panama-Pacific International Exposition.
78. Feb., 1916, The Sanitary Index. A. Method of Measuring Public Health Work.
79. March, 1916, Proper Housing Means Cleanliness. An Address in the Conference of the Pennsylvania Housing and Town-Planning Association.
80. April, 1916, Pennsylvania and her Municipalities. An Address before the State Association of Boroughs.
81. May, 1916, The Department of Health Laboratory, and what it has done for the Physicians of the State. Read before the Schuylkill County Medical Society.
82. June, 1916, Fifteen Little Talks on Health and Hygiene.
83. July, 1916, Fifteen Little Talks on Health and Hygiene.
84. Aug., 1916, Fifteen Little Talks on Health and Hygiene.
85. Sept., 1916, Fifteen Little Talks on Health and Hygiene.
86. Oct., 1916, Fifteen Little Talks on Health and Hygiene.
87. Nov., 1916, Fifteen Little Talks on Health and Hygiene.
88. Dec., 1916, Fifteen Little Talks on Health and Hygiene.
89. Jan., 1917, Little Talks on Health and Hygiene.
90. Feb., 1917, Little Talks on Health and Hygiene.
91. March, 1917, Little Talks on Health and Hygiene.
92. April, 1917, Little Talks on Health and Hygiene.
93. May, 1917, Insects.
94. June, 1917, Typhoid and Typhophors.

NOTE:—Owing to the exhaustion of the supply, Bulletins of the above list bearing the numbers:—
7, 9, 10, 33, 39, 49, are no longer available for distribution.

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Samuel G. Dixon, M. D., LL. D., Sc. D.,
COMMISSIONER.

INFANTILE PARALYSIS

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INFANTILE PARALYSIS.*

With the full appreciation of the force of Lord Bacon's accusation that "A man good at excuses was usually good for nothing else," I ask you to excuse me for not whipping my words into better shape. The excuse is that in these revolutionary times, those holding public offices are overwhelmed by questionnaires from innumerable commissions, committees, associations and societies.

The subject "Poliomyelitis" is one upon which much work has been done and much has been said, yet there is still a dearth of exact knowledge. My only excuse for being here tonight is to refresh your memories as to what has been told you before about the part taken by Pennsylvania's State Department of Health and what she recommends, both for general and police practice, in the battle against a number of sporadic cases, or possibly against epidemic conditions which may arise this summer.

The history of epidemics of poliomyelitis does not point to a recurrence of an epidemic or a large number of sporadic cases this season, unless perchance it should come from one of the epidemics previous to that of last year. Last year's epidemic seemed to come from New York City. If so, it was not indigenous with us. The history of poliomyelitis, as I have said, would indicate that it, like much other organic life, comes in waves. For instance, if we have a good apple season this year, the crop next year is not likely to be as full. These waves are noticeable in insect life. The lower forms of life, such as fungi, are almost sure to run in waves from year to year. However, as these generalizations are exceedingly uncertain, we must be prepared for an attack this summer.

*Address by Samuel G. Dixon, M. D., LL. D., Sc. D., upon Poliomyelitis before the Philadelphia Pediatric Society at the Academy of Natural Sciences, June 12, 1917.

In 1907, the Department encountered the first epidemic of Infantile Paralysis in Pennsylvania. It began in midsummer and gradually increased until November, after which month only a few cases appeared here and there throughout the State. An interesting clinical account of this epidemic is to be found in the Annual Report of the Department of Health for 1907 (pages 420 to 440). Dr. Herbert Fox and Dr. J. B. Rucker did the field and Laboratory work. They made a very thorough investigation, including statistics in relation to environment, insect and fungus life, as well as geological formations. This article is particularly interesting because it cites the fact that "A Gram positive diplo or tetra-coccus was recovered when the spinal fluid was poured into glucose bouillion and incubated. This Gram positive diplo or tetra-coccus was found in all the cultures from the nose and throat. None of these cultures produced any pathogenic manifestations in experimental animals which could be compared to poliomyelitis; indeed they seemed devoid of pathogenicity. The spinal fluid of two of the cases was injected into the spinal canal of a monkey without result. The monkey's nose and throat were inoculated with the Gram positive coccus, likewise without results." In this report we admitted that we might not know how to handle these organisms, but, as time has gone on and as other work has been done, we are not willing to change our views as to our negative results, while we are anxiously watching our fellow-workers, who seem sanguine of the positive action of similar organisms since isolated by them.

The history of poliomyelitis dates back to 1838 and extends from Norway to northern Alaska and to the most southern states of our Union. For a fuller history I refer you to my address to the Philadelphia County Medical Society in 1916, published in the Journal of the American Medical Association, January 18th, 1917. The disease was not reportable in 1907. We depended upon the grace of the medical profession and to our newspaper clipping bureaus for knowledge of the cases. In this, our first work, the various stages of severity occurring in epidemic poliomyelitis, varied from the abortive type to a rapid form like Landry's paralysis, combined with symptoms and signs of meningeal irritation. It was our suspicion at that time that simple contact did not always explain the transmission. The clinical and pathological findings have stood the criticism of time while a number of our tentative conclusions of 1907 are still unsettled. In that year we had 131 reported cases. It cannot be known how many were unreported. Seven counties (Elk, Forest, Jefferson, Clarion, Venango, Warren and Lawrence) shared in the outbreak. In 1908 a similar outbreak visited Adams County. Map study of these cases and later ones suggest that the disease is quite as likely

to appear in a new centre as to reappear in a centre recently infected. During 1908 Pennsylvania suffered slightly from poliomyelitis. On account of the presence of the disease elsewhere, I called together the Advisory Board of the State Department of Health, and after conference it was decided to promulgate a regulation placing poliomyelitis among the reportable diseases of Pennsylvania; therefore our comprehensive morbidity and mortality records date back to and include 1910. In this year, after a few cases reported in July, an epidemic of some proportions spread rapidly. In the month of August we had 275 cases; September 378 cases; October 197 cases; November 25 cases; December 15 cases. The prevalence of the disease began to abate in October and continued through the fall months, practically disappearing with the coming of winter. Total number of cases reported during the final six months of 1910 was 1,112. The total number of deaths was 269. For this fateful year for Pennsylvania we looked forward to 1911 with considerable anxiety, yet 177 cases only occurred in that calendar year. In 1912, there were 267 cases; in 1913 there were 141 cases; in 1914, 113 cases; and in 1915, 162 cases showing a definite decline followed by a slight rise covering the four years preceeding 1916. During these four years, the cases were scattered over the State, but not in uniform manner, as whole counties escaped entirely. In certain instances, isolated mountain homes were visited by the disease, making it difficult to explain the cases by theories of either human or insect carriers. In 1914, in the southwestern section of Washington County there occurred 32 cases, while in 1915 the concentration was in the northwestern corner of the State, in and about the City of Erie, where about 100 cases developed.

We now come to the year 1916, during the first six months of which year there occurred but 22 cases in our State, covering an area of 45,000 square miles. As the summer approached, however, a severe outbreak of the disease, an outbreak previously unequaled in number of cases, occurred in the city of New York, rapidly extending into New Jersey and other States. Accompanying this sudden extension and the high death rate, there arose in the public mind a condition of hysteria. My 'phone rang both day and night for sixty days, for advice as to what was best to be done with the children.

This raised the question in the minds of public health officers "How to treat the psychological condition, in addition to our work started to prevent the spread of the disease." We were unfortunately up against it, not knowing how nature spreads the infection. Many cases would seem to have come from personal contact with those infected, while others would fall to its attack without apparently being exposed to one infected. There was much evidence of direct

infection, such as we have in communicable disease caused by microscopic life, yet the possibility of the presence of an independent or intermediate host or carrier could not be gainsaid.

To care for the mental condition of the public, the possibility of direct contact infection and the possibility of some foreign carrier or host that might be the intermediate cause of the disease, the State Advisory Board adopted three weeks quarantine for the sick. The City of Philadelphia followed New York City and made quarantine four weeks; so that we extended our period to thirty days, to come nearer our own great city. We never believed it necessary to adopt a longer period and must come back this year to our original three weeks detention.

The State wide quarantine, covering a boundary line of 900 miles, satisfied our people that their children were going to be cared for regardless of the expenditures of energy and money. This was quite an undertaking. However, our Department was organized to take charge of epidemics and catastrophes. The mobilization was quickly accomplished and in two days a little army of men was ready for duty. Railroad stations, ferry and steam boat landings, public highways, motor and row boats, bridges and automobiles were guarded by our police. The order had been advertised and on a Monday at midnight our officers were on guard. All children under sixteen years of age had to have certificates of health and non-exposure to others suffering with the disease. These certificates were issued by the health authorities of their home districts.

All railroad coaches and freight cars, carrying second-hand furniture, were disinfected. These measures kept thousands of sick and infected children from our midst. At the same time, the cleansing of transportation vehicles may have kept out carriers or hosts of the unknown cause.

There was more trouble with the educators, on account of closing the schools, than any persons we had to deal with through the quarantine period. Educators, as a rule, object to closing of the schools no matter what threatens the lives of children.

The result was that in Philadelphia we escaped with an approximate incidence of one case per 15,000 population, against New York's incidence of 27 cases per 15,000 population. In the same connection it is interesting to note that the rate of incidence in Newark, New Jersey, was 49.5 cases per 15,000 population, *fifty times* greater than Philadelphia.

The termini of our great railroads from disease districts became the infected centers in Pennsylvania; as for example, Philadelphia with its direct lines, the Pennsylvania and Reading railroads. Before quarantine we caught infected and sick children coming into

Pennsylvania from New York. Wilkes-Barre and Scranton together represent another great terminus of New York trains and there we got the next biggest bunch of cases. The railroads seemed to continue to carry the cause of the disease, after the children were cut off; therefore, we quarantined second-hand furniture, etc., and recommended our people not to go through infected districts in other states, as we only recognized the infected environments.

Without theorizing as to the unknown cause, under the circumstances it was enough to know that the disease existed in a place, for us to advise the public to steer clear of the environment. Pennsylvania, including her greater cities, quarantined the cases in the strictest manner, fearing the contact infection theory as a possibility, while New York, in some of her infected districts, placarded without real quarantine. She did, however, do everything in her power to carry her cases to the hospital, where, of course, good quarantine must have been enforced.

The different features of this disease are so interlocked that I might as well enlarge here upon communicability by giving a few facts in the Pennsylvania epidemic in 1910. We only recognized a small percentage of second cases in families with two or more children. In the children's institutions where infected children were admitted and came in contact with healthy children, we had few, if any, second cases. This was also true to some degree in hospitals. In our laboratory we exposed a large number of perfectly healthy monkeys to sick monkeys in all stages of poliomyelitis. In some cases we smeared the nasal mucus of those sick upon the nasal mucous membrane of the healthy animals. These monkeys lived in the closest contact with each other night and day. They ate together, fought and played together, but never succeeded in transmitting the disease from the sick to the well.

These facts stimulate us to continue a broad hunt for the enemy. We recognize that it is claimed that those persons who have not become immune by having the disease will become infected when exposed, but possibly so slightly as not to be recognized under ordinary circumstances. This is not satisfying when we consider that among thousands of children in institutions, a hundred per cent. either resist the disease entirely or to such an extent that they never appear to be sick. Right here we may ask ourselves "Why the enormous difference in resistance to the disease in children's institutions and in private homes?" Here the question of food lines attracts attention. In the institutions a much greater proportion of the foodstuff served is cooked. In the private homes of children, the diet is not only of a greater variety but includes raw vegetables and fruit. If it were not for the breast fed babies, this difference in susceptibility

to the disease when food is cooked versus raw food would be well worth receiving considerable attention in our handling of epidemics. The milk fed infant does not entirely discount the suggestion of cooked foods versus raw foods, for the reason that a large proportion of breast and bottle fed babies often get a variety of foods from the mother's or nurse's fingers.

Our laboratory work has been continuously pursued for years without the discovery of the cause of poliomyelitis. The experiments that have been without result are too numerous to mention. They are, however, out of our way and the field of research therefore has been somewhat reduced. Today we are working along several lines of immunity against the disease and against paralysis. The pursuit of laboratory investigations is of the highest importance. The search for that which produces poliomyelitis in man is of the highest scientific interest. We, however, as health officers, are spending more energy in search of that which will prevent the disease or for an antitoxin to prevent the paralysis.

High stakes at Monte Carlo cannot interest or excite the gambler as does original research work interest the laboratory worker, when it is directed to recover a product to save the lives of our people from disease produced by single celled organisms or other low forms of life. So interested do we become in following out the theories evolved by facts and the scientific imagination that the dangers surrounding the work are not as a rule thought of, any more than the soldier thinks of his own life when in the heat of battle. The soldier, however, dies a heroic death while the bacteriologist fights his fight against deadly disease-producing germs and is rarely heard of by the public.

During our years of research work on poliomyelitis, we have on several occasions, owing to coincidence, enjoyed the thought that our task had been accomplished; only to end in disappointment. Today, we are in the midst of most interesting work. It is too early, however, to count on success. We therefore have nothing to say to the profession or the public that would give them false hopes. Too often the innocent laboratory worker has spoken of promising work and has been misunderstood and quoted as having made a great discovery. Just to give you a little insight to our work I will give you a superficial glance at a portion of one of our present undertakings. We are not altogether alone in this experiment. This is often the case as we approach a goal. At times two workers cross the line together or tumble, arm in arm, headlong into the pit of disappointment. About a year ago we worked out a theory to produce a substance that might bear upon the modification of the disease commonly known as Infantile Paralysis. The first move required a virus, made from

the human spinal cord of a patient dead with the disease. Then a monkey, the most susceptible of the lower animals to this disease, was injected with the virus. This was accomplished without difficulty. Then came the task of injecting small rabbits with the spinal cord of the monkey. The line of work was begun on rabbit No. 1, this animal having been inoculated intraperitoneally with a saline emulsion of a portion of the spinal cord of the monkey. This produced what we called poliomyelitis in rabbits, ending in death. This rabbit's spinal cord was treated and rabbit No. 2 was inoculated and carefully observed by those versed in the clinical and pathological evidences of the disease. No marked differences were noted in No. 2 from conditions produced in No. 1. This work was continued under scientific manipulation and observation until we finished with the tenth rabbit. Then, believing we had a modified condition, we reversed our work, gradually running down the line of rabbits, each time using a stronger virus. When we reached No. 4 we returned it to a monkey with a modified result. This is only given to you that you may have some better realization of our methods adopted in our work in search for something to overcome this miserable disease which has attacked the human race. At present we are also working along the lines of other theories. You must understand that we do not know what produces the disease and we have not as yet a satisfactory result in our research work for prevention or cure.

THE DIAGNOSIS must be dependent upon keen diagnostic skill. Independent of individual clinical symptoms and even when coupled with a microscopic examination of the spinal fluid, the medical profession recognizes the importance of the general feeling which the picture of the condition of the patient presents to him. We have all heard of critics of art who say, after admiring a picture, "It has good atmosphere with good drawing and effective grouping, but the picture on the whole is bad." The lay person has no conception of the different degrees of variation in which diseases present themselves, variations far removed from the classical cases which the medical teachers depend upon in teaching their students. In fact the variations are so numerous that they can only be studied in practice or in extended hospital experience.

In poliomyelitis it is important to make an early diagnosis. In an epidemic it is better to give every uncertain case the benefit of the doubt. My advice, therefore, is to watch our children closely during the present season and upon the least indisposition to call in your physician. The poor will always find in the profession philanthropists. This disease, like many others, has a variety of ways of presenting itself. This is all I mean to say on diagnosis, as I am

speaking to members of the Pediatric Society. Those present are constantly at the bedsides of children and are much better prepared to discuss the question of diagnosis than I am, one pulled here and there from emergency work to the requirements of special laboratory work. So far as our lay friends present are concerned, it would be a mistake for me to undertake to teach them, off hand, even what I could, as a little knowledge is a dangerous thing. It makes me shudder to see people undertake to diagnose their own cases and then begin to dose themselves with active drugs. Such practice has shortened the lives of many of our friends. As I have said, my modesty and want of a keen, fresh knowledge of the requirements of the clinical side of poliomyelitis will not permit me to enlarge on this branch of the subject. There are many present quite capable of discussing this in its latest phases.

Treatment is even today largely empirical and therefore must be left to the physician. Therefore, this phase must be spoken of by someone who is devoting his life to bedside practice. I hope some laboratory man will some day in the near future place in the hands of the therapist an exact cure or something that will immunize.

A few words on public hygiene in relation to poliomyelitis: Environment has been reviewed by the State Health Department. It is a most complex question. This you will realize when you consider the possibilities still hanging over the cause of this disease. The geological formations, some with dry and some with wet soils, the variations in topography, some sea level regions and some snow topped mountains, are to be considered. The untold variety of insect life; a visit to the entomological section of this Academy will demonstrate millions of varieties; Plant life might perchance be a factor, yet its species are so vast and the geographical range is so spread by artificial methods of transportation, that one simply looks at this task with awe. Even reptile life has been thought of by some of us who have imaginations. When it comes to civil life I am inclined to the opinion that environment has a bearing on the life of the disease.

During the late epidemic of poliomyelitis the disease showed an angry condition at Bristol in Bucks County, Confluence in Somerset County and Old Forge in Lackawanna County. All of these boroughs were small and therefore loaned themselves to a very thorough cleaning up. This was accomplished to a great extent in Bristol and Old Forge and in these two municipalities the cleaning up, inside and outside the houses, and an attempt to educate the inhabitants, seemed to bring a result, as the disease soon quieted down.

The Department, in cooperation with our strong and efficient local health boards, has decided to insist on general cleanliness. Every

house should be immaculately clean, free from insect life, flies of all kinds, mosquitoes, cockroaches, fleas, lice, etc. All foods should be kept clean and free from mould. In fact, with what I have said about the freedom of children living in institutions and the habit of feeding more cooked food there than in private life, I would personally recommend the cooking of all foods for children. If uncooked fruit or vegetable matter is at all connected with the disease the chances are that the cause is carried on the outside of the food. Don't forget, however, what I have said about the breast and bottle fed babies having the disease. It is only our want of knowledge that makes us so comprehensive in our precautions. We all discourage the congregating of children and recommend keeping them in the best of health, cleanly, regularly fed, giving those with teeth a little meat, fat and white or whole wheat bread, rice, macaroni, potatoes or other starchy foods, but all in moderation. Babies and small children should not be chilled at night; they should not bathe until they are blue or cold; they should not exhaust themselves at play or work.

If animals are to be kept in the house they should be kept free of insect life. The homes should be screened against insect life. If not thoroughly screened they become fly traps. Just here I will mention one interesting fly we ran to ground, the appendigaster. This fly enters dwellings, goes to the floor and seeks the cockroaches' nest. In it she lays her eggs. These hatch a little later than the cockroaches and they live off the larvae of the cockroach. Just here I will mention another line of work that was done. Certain wasps inject a fluid into their prey to paralyze them. Therefore we used this fluid to determine its effect upon small animals. The result was negative.

Homes should be well aired and sunned. Adults who travel about should brush their clothes before mingling with their children. Grounds around dwellings should be kept clean; no manure should be kept exposed to insects or breeding places. Rain barrels, tin cans and bottles should not be left around for mosquitoes to breed in. Small pools should be drained or filled up to prevent the breeding of mosquitoes and all other insects. Dead weeds and tops of vegetables should be raked up and destroyed. Traps in drains often furnish great breeding places for mosquitoes in country places.

The quarantine for cases this year will, I believe, be three weeks. The massing of children will be forbidden if the disease appears in a threatening way. General quarantine will depend entirely upon the progress of the disease.

Before closing my remarks I want to again refer to the advisability of sending for a physician when your child gets sick. In the early stage he is much needed. The child needs absolute quiet and all the rest possible. If any deformity comes from the attack you want the

orthopedist. I bring this subject up especially to warn the anxious parent, heart broken over the deformity of the child, against resorting to charlatans who promise impossibilities. Don't permit manipulation, electricity and massage unless under the advice of a physician of high standing. Otherwise the child's sole chance of recovery is swept away by vicious treatment at the hands of these extortionate and conscienceless parasites of society.

PENNSYLVANIA HEALTH BULLETINS.

1.	July,	1909.	The Disease-Breeding Power of House-flies; Method of Prevention.
2.	Aug.,	1909.	Note on the Similarity of Barium Carbonate Poisoning and Rabies in Dogs.
3.	Sept.,	1909.	The Family Physician.
4.	Oct.,	1909.	Legal Rights and Tuberculosis. The Public Drinking Cup.
5.	Nov.,	1909.	The Germicidal Effect of Water from Coal Mines and Tannery Wheels upon Bacillus Typhosus, Bacillus Coli, and Bacillus Anthracis.
6.	Dec.,	1909.	Report on the Effect of Repeated Injections of Products of the Tubercle Bacillus on Lymphatic Organs.
7.	Jan.,	1910.	Little Dangers to be Avoided in the Daily Fight Against Tuberculosis.
8.	Feb.,	1910.	The Object to be Attained by the Medical Inspection of School Children.
9.	March,	1910.	Conservation of Human Life in Pennsylvania. The Results of Four Years' Work of the Department.
10.	April,	1910.	The Biological Treatment of Tuberculosis as Conducted by the Department.
11.	May,	1910.	The Bubonic Plague, its Origin, Progress, and Means of Prevention.
12.	June,	1910.	A Retrospective Glance. 1. Susceptibility to Tuberculosis. 2. Purity of Milk. 3. Bovine Tuberculosis.
13.	July,	1910.	Experiments on Tubercle Bacilli, Old Tuberculin, and the Fluid of Dixon.
14.	Aug.,	1910.	The Conservation of Child Life in Pennsylvania.
15.	Sept.,	1910.	Obedience to Nature's Laws the Primary Defence against Disease.
16.	Oct.,	1910.	The Conservation of Infant Life in Pennsylvania.
17.	Nov.,	1910.	Pennsylvania's Standing Army of Health.
18.	Dec.,	1910.	Producers and Consumers. Pennsylvania's Tuberculosis Schools.
19.	Jan.,	1911.	The Effect of Injections of Taurin upon Tumors of Mice and Dogs.
20.	Feb.,	1911.	Some Duties, Ideals, and Opportunities of the Country Doctor.
21.	March,	1911.	Malaria: How it is Caused, and How to Get Rid of it.
22.	April,	1911.	Health.
23.	May,	1911.	The Common Fly. How it Develops. Why it must be Destroyed, and How to Destroy it.
24.	June,	1911.	Effects of Products of Tubercle Bacilli on Epithelium.
25.	July,	1911.	Five Years of Tuberculosis in Pennsylvania.
26.	Aug.,	1911.	Organization of the Pennsylvania State Department of Health.
27.	Sept.,	1911.	Tuberculosis, in the Country as well as in the City, a Disease of Bad Housing and Lack of Nourishing Food.
28.	Oct.,	1911.	The Preparation of the Biological Products Distributed by the Pennsylvania Department of Health.
29.	Nov.,	1911.	The Foundations of State Medicine.
30.	Dec.,	1911.	Experiments Tending to show the Infrequency of the Occurrence of Tubercle Bacilli in the Urine of Patients Suffering from Pulmonary Tuberculosis.
31.	Jan.,	1912.	The Baby the Most Important Problem in Modern Life.
32.	Feb.,	1912.	Insects. The Common Forms in Relation to Public Health, and Methods for their Destruction.
33.	March,	1912.	The Opportunities for the Trained Nurse in Sanitary Service.
34.	April,	1912.	How to Organize a Baby-Saving Show.
35.	May,	1912.	Drowning.
36.	June,	1912.	The Health of Suburban Residences.
36½.	July,	1912.	Report of the Austin Disaster.
37.	Aug.,	1912.	Getting Close to the People. Caring for the School Children.
38.	Sept.,	1912.	Modern Medicine and the Physician.
39.	Oct.,	1912.	Battling for Health at Mount Alto.
40.	Nov.,	1912.	Tuberculin.
41.	Dec.,	1912.	Conservation of Health. An Address.
42.	Jan.,	1913.	Municipal Sanitation.
43.	Feb.,	1913.	Tuberculosis and Our Schools.
44.	March,	1913.	The Relation of the Undertaken to the Public Health.
45.	April,	1913.	What State Control over Streams has done in Pennsylvania in Seven Years.
46.	May,	1913.	Troy Typhoid Fever Epidemic.
47.	June,	1913.	The Registration of Vital Statistics a Social Service.
48.	July,	1913.	Pennsylvania's Eugenic Marriage Law.
49.	Aug.,	1913.	Pennsylvania's Health Legislation of 1913.
50.	Sept.,	1913.	Health and Education. An Address.
51.	Oct.,	1913.	Relation of Public Health to Industrial Welfare. An Address.
52.	Nov.,	1913.	Bathing.
53.	Dec.,	1913.	Results from the Injection of the Wax of the Tubercle Bacillus Indicating its Influence on Immunity and Susceptibility to the Tubercle Bacillus.
54.	Jan.,	1914.	The Waters of Pennsylvania. An Address.
55.	Feb.,	1914.	Reproduction and Race Betterment.
56.	March,	1914.	The State Tuberculosis Dispensary as a Social Service in Pennsylvania.
58.	Rev. Apr.	1914.	The Preparation of the Biological Products Distributed by the Pennsylvania Department of Health.
57.	May,	1914.	Insanitary Bath Tubs and Lavatories.
58.	June,	1914.	On Housing.
59.	July,	1914.	Medical and Sanitary Inspection of Schools of Fourth Class Districts in Pennsylvania.
60.	Aug.,	1914.	Progress in Preventive Medicine in Pennsylvania since the Creation of a State Department of Health.
61.	Sept.,	1914.	Certain Standards for Tuberculosis Dispensaries.
62.	Oct.,	1914.	On the Upfollow of Sanatorium Patients.
63.	Nov.,	1914.	Effective Rural Sanitation. End Results.
64.	Dec.,	1914.	Pennsylvania's System of Tuberculosis Dispensaries.
65.	Jan.,	1915.	Present organization of the State Department of Health.
66.	Feb.,	1915.	Notes on Typhoid Fever in Pennsylvania for the Past Nine Years.
67.	March,	1915.	Epidemic of Typhoid Fever in Skippackville and Vicinity.
68.	April,	1915.	Diphtheria and Diphtheria Antitoxin.
69.	May,	1915.	Flies as a Factor in Infant Mortality.
70.	June,	1915.	Pennsylvania Health Legislation of 1915.
71.	July,	1915.	On the Medical Inspection of 469,000 School Children in Pennsylvania.
72.	Aug.,	1915.	The Sanitary Engineer in Public Health Work.
73.	Sept.,	1915.	Quarantine of the Home as Practised by the Department of Health.
74.	Oct.,	1915.	An Address before the Pennsylvania Water Works Association.
75.	Nov.,	1915.	An Address at the Laying of a Corner-Stone in Pittsburgh.
76.	Dec.,	1915.	On the Prevalence of Typhoid Fever in Philadelphia in the Autumn of 1915.

77.	Jan.,	1916.	The Pennsylvania Department of Health Exhibit at the Panama-Pacific International Exposition.
78.	Feb.,	1916.	The Sanitary Index. A Method of Measuring Public Health Work.
79.	March,	1916.	Proper Housing Means Cleanliness. An Address in the Conference of the Pennsylvania Housing and Town Planning Association.
80.	April,	1916.	Pennsylvania and Her Municipalities. An Address before the State Association of Boroughs.
81.	May,	1916.	The Department of Health Laboratory, and what it has done for the Physicians of the State. Read before the Schuylkill County Medical Society.
82.	June,	1916.	Fifteen Little Talks on Health and Hygiene.
83.	July,	1916.	Fifteen Little Talks on Health and Hygiene.
84.	Aug.,	1916.	Fifteen Little Talks on "Health and Hygiene."
85.	Sept.,	1916.	Fifteen Little Talks on Hygiene.
86.	Oct.,	1916.	Fifteen Little Talks on Hygiene.
87.	Nov.,	1916.	Fifteen Little Talks on Hygiene.
88.	Dec.,	1916.	Fifteen Little Talks on Hygiene.
89.	Jan.,	1917.	Little Talks on Health and Hygiene.
90.	Feb.,	1917.	Little Talks on Health and Hygiene.
91.	March,	1917.	Little Talks on Health and Hygiene.
92.	April,	1917.	Little Talks on Health and Hygiene.
93.	May,	1917.	Insects.
94.	June,	1917.	Typhoid and Typhophora.
95.	July,	1917.	Infantile Paralysis.
96.	Aug.,	1917.	Administration in Typhoid Epidemics, as carried out by the Pennsylvania State Department of Health.

NOTE:—Owing to the exhaustion of the supply, Bulletins of the above list bearing the numbers:—7, 8, 10, 23, 39, 40, are no longer available for distribution.

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PENNSYLVANIA

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PUBLISHED MONTHLY BY
THE STATE DEPARTMENT OF HEALTH
SAMUEL G. DIXON, M. D., LL. D., So. D.,
COMMISSIONER.

PENNSYLVANIA
HEALTH LEGISLATION OF 1917

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PENNSYLVANIA HEALTH LEGISLATION OF 1917.

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No. 282.

AN ACT

For the protection of the public health by regulating the possession, control, dealing in, giving away, delivery, dispensing, administering, prescribing, and use of certain drugs, and keeping records thereof; by regulating the use of drugs in the treatment of the drug habit; by providing for the revocation and suspension of licenses of physicians, dentists, veterinarians, pharmacists, druggists, and registered nurses for certain causes, and by providing for the enforcement of this act, and penalties.

Public health.

"Drug" defined.

Section 1. Be it enacted, &c., That, except as limited in section two of this act, the word "drug," as used in this act, shall be construed to include—(a) opium; or (b) coca leaves; or (c) any compound or derivative of opium or coca leaves; or (d) any substance or preparation containing opium or coca leaves; or (e) any substance or preparation containing any compound or derivative of opium or coca leaves.

Not included as a drug.

Section 2. The word "drug" shall not be construed to include—(1) preparations and remedies and compounds which do not contain more than two grains of opium, or more than one-fourth of a grain of morphine, or more than one-eighth of a grain of heroin, or more than one grain of codeine or any salt or derivative of any of them, in one fluid ounce, if the same is liquid; or, if a solid or semi-solid, in one avoirdupois ounce; (2) liniments, ointments, or other preparations, prepared and dispensed in good faith for external use only; providing such liniments, ointments, and preparations do not contain cocaine or any of its salts, or alpha or beta eucaine or any of their salts, or any synthetic substitute for cocaine or eucaine or their salts; (3) decocainized coca leaves, or preparations made therefrom, or other preparations of coca leaves which do not contain cocaine:

Proviso.

Provided, however, That no preparations, remedies or compounds containing any opium, or coca leaves, or any compound or derivative thereof, in any quantity whatsoever, may be sold, dispensed, distributed, or given away to, or for the use of, any known habitual user of drugs, except in pursuance of a prescription of a duly licensed physician or dentist.

"Person" defined.

Section 3. The word "person," as used in this act, shall be construed to include an individual, a copartnership, or an association. Masculine words include the feminine or neuter. The singular includes the plural. The word "prescription" shall be construed to designate a written order, by a duly licensed physician, dentist, or veterinarian, calling for a drug, or for any substance or preparation containing a drug.

Gender and number.

"Prescription" defined.

Ownership, sale, etc.

Section 4. No person shall have in his possession or under his control, or deal in, dispense, sell, deliver, distribute, prescribe traffic in, or give away, any of said

drugs. This section does not apply, in the regular course of their business, profession, employment, occupation, or duties, to—(a) manufacturers of drugs; (b) persons engaged in the wholesale drug trade; (c) importers or exporters of drugs; (d) registered pharmacists actually engaged as retail druggists; (e) bona fide owners of pharmacies or drug-stores; (f) licensed physicians; (g) licensed dentists; (h) licensed veterinarians; (i) persons in the employ of the United States, or of this Commonwealth, or of any county, municipality, or township of this Commonwealth, and having such drugs in their possession by reason of their official duties; (j) warehousemen, or common carriers, engaged, bona fide, in handling or transporting drugs; (k) persons regularly in charge of drugs in dispensaries, hospitals, asylums, sanatoriums, poor-houses, jails, penitentiaries, or public institutions; (l) nurses under the supervision of a physician; (m) persons in charge of a laboratory where such drugs are used for the purpose of medical or scientific research only; (n) captains, or proper officers, of ships upon which no regular physician is employed, for the actual medical needs of the officers and crews of their own ship only; (o) persons having said drugs in their possession for their own personal use only, provided that they have obtained the same in good faith, for their own use, from a duly licensed physician or dentist, or in pursuance of a prescription given them by a duly licensed physician or dentist; (p) persons having said drugs in their possession for the use of an animal belonging to them, provided that they have obtained the same in good faith, from a duly licensed veterinarian, for the use of such animal, or in pursuance of a prescription given by a duly licensed veterinarian; (q) persons in the bona fide employ of any of the persons above enumerated.

To whom section does not apply.

Section 5. No person shall use, take, or administer to his person, or cause to be administered to his person, or administer to any other person, or cause to be administered to any other person, any of the aforesaid drugs, except under the advice and direction, and with the consent, of a regularly practicing and duly licensed physician or dentist.

Administration of drugs.

Section 6. No manufacturer, producer, importer, exporter or person engaged in the wholesale drug trade, and regularly selling drugs, shall sell, dispense, distribute, or give away, any of said drugs, except to—(a) a duly licensed physician; (b) a duly licensed pharmacist; (c) a duly licensed dentist; (d) a duly licensed veterinarian; (e) a manufacturer of drugs; (f) a person engaged in the wholesale drug trade and regularly selling drugs; (g) an exporter of drugs; (h) a bona fide hospital, dispensary, asylum, or sanatorium; (i) a public institution; (j) a bona fide owner of a phar-

Exceptions.

macy or drug store; (k) a person in a foreign country; (l) a person in charge of a laboratory where such drugs are used for the purpose of scientific and medical research only; (m) the captain, or proper officer, of a ship upon which no regular physician is employed, for the actual medical needs of the officers and crew of such ship only; (n) a person in the employ of the United States, of this Commonwealth, or of any county, municipality, or township thereof, purchasing or receiving the same in his official capacity.

Written order.

No manufacturer, producer, importer, or person engaged in the wholesale drug trade, and regularly selling drugs, shall sell, dispense, distribute, or give away any of said drugs, except in pursuance of a written order signed by the person to whom such drug is sold, dispensed, distributed, or given. Such order shall be preserved for a period of two years, in such a way that it will be readily accessible to inspection by the proper authorities.

Who may obtain drugs.

Section 7. No registered pharmacist, or bona fide owner of a pharmacy or drug store, regularly engaged in the sale of drugs at retail, shall sell, dispense, distribute, or give away any of said drugs, except to — (a) another registered pharmacist or bona fide owner of a pharmacy or drug store; (b) a duly licensed physician; (c) a duly licensed dentist; (d) a duly licensed veterinarian; (e) a bona fide hospital, dispensary, asylum, sanatorium, or public institution; (f) an individual, in pursuance of a written prescription issued by a physician, dentist, or veterinarian, which prescription shall be dated as of the day on which signed, and shall be signed by the physician, dentist, or veterinarian who issued the same; (g) a person in charge of a laboratory where such drugs are used for the purpose of medical or scientific research only; (h) the captain, or proper officer, of a ship upon which no regular physician is employed, for the actual medical needs of the officers and crew of such ship only; (i) a person in the employ of the United States, or of this Commonwealth, or of any county, municipality, or township thereof, purchasing or receiving the same in his official capacity.

Written order.

To be preserved two years.

No registered pharmacist, or bona fide owner of a pharmacy or drug store, regularly engaged in the sale of drugs at retail, shall sell, dispense, distribute, or give away any of said drugs, except in pursuance of a written order signed by the person to whom such drugs are sold, dispensed, distributed, or given. Such order shall be preserved, for a period of two years, in such a way that it will be readily accessible to inspection by the proper authorities. When such drugs are sold, dispensed, distributed, or given to an individual, in pursuance of a prescription, such prescription shall be regarded as the written order herein required, and no further written order shall be necessary.

Section 8. No physician or dentist shall sell, dispense, administer, distribute, give, or prescribe any of said drugs to any person known to such physician or dentist to be an habitual user of any of said drugs, unless said drug is prescribed, administered, dispensed, or given for the cure or treatment of some malady other than the drug habit: Provided, however, That if any physician desires to undertake, in good faith, the cure of the habit of taking or using opium or any of its derivatives, in any form, such physician may prescribe or dispense opium or its derivatives to a patient, provided such opium or its derivatives are prescribed or dispensed in good faith, for the purpose of curing such patient of such habit, and not merely for the purpose of satisfying a craving for the drug. In every such case the physician shall himself make a physical examination of the patient, and shall report, in writing, to the proper officer of the board of health of the city, borough, town, or township in which he resides, or to the State Department of Health, where there is no local board of health, the name and address of such patient, together with his diagnosis of the case and the amount and nature of the drug prescribed or dispensed in the first treatment. When the patient leaves his care such physician shall report, in writing, to said officer of the board of health, or to the State Department of Health, the result of his said treatment.

Habitual users.

Proviso.

Examination by physician.

Report to health officers or State Department of Health.

Any person divulging any information contained in any such report, except for the purpose of enforcing this act, or to a physician who may, in the opinion of the chief of the board of health or of the Commissioner of Health, be entitled to such information for the purpose of enabling him to comply with the provisions of this act, shall be sentenced to pay a fine not exceeding one thousand dollars, or to undergo an imprisonment not exceeding one year, or both, in the discretion of the court.

Divulging information in report.

Penalty.

Section 9. No physician, dentist, or veterinarian shall administer, dispense, give away, deliver, or prescribe any of said drugs, except after a physical examination of the person or animal for whom said drugs are intended; said examination to be made at the time said prescription is issued, or at the time said drug is administered, dispensed, given away, or delivered by said physician, dentist, or veterinarian. No veterinarian shall sell, dispense, distribute, give, or prescribe any drug for the use of a human being.

Person or animal to be examined.

Section 10. Every physician, dentist, and veterinarian shall keep a record of all said drugs administered, dispensed, or distributed by him, showing the amount administered, dispensed, or distributed, the date, the name and address of the patient; and, in the case of a veterinarian, the name and address of the owner of the animal to whom such drugs are dispensed or distribu-

Record to be kept.

ted; such record shall be kept for two years from the date of administering, dispensing, or distributing such drug, and shall be open for inspection by the proper authorities. No record need be kept of any drug administered in an emergency case.

Where act does
not apply.

Section 11. This act shall not be construed to apply to the treatment of habitual users of drugs in public hospitals, sanatoriums, poorhouses, prisons, or public institutions.

Violation.

Section 12. Any person who shall violate, or fail to comply with, any of the provisions of this act, except as provided in the last paragraph of section eight, shall be guilty of a misdemeanor; and, upon conviction, shall be sentenced to pay a fine not exceeding two thousand dollars, or to undergo an imprisonment not exceeding five years, or both, at the discretion of the court. If the violation is by a corporation, copartnership, or association, the officers and directors of such corporation, or the members of such copartnership or association, their agents and employes, with guilty knowledge of the fact, shall be deemed guilty of a violation of the provisions of this act to the same extent as though said violation were committed by them personally.

Misdemeanor.

Penalty.

Guilty knowledge.

Burden upon
defendant.

Section 13. In any prosecution under this act it shall not be necessary to negative any of the exemptions of this act in any complaint, information, or indictment. The burden of proving any exemption under this act shall be upon the defendant.

Revocation of
license.

Section 14. Any license heretofore issued to any physician, dentist, veterinarian, pharmacist, druggist, or registered nurse may be either revoked or suspended by the proper officers or boards having power to issue licenses to any of the foregoing, upon proof that the licensee is addicted to the use of any of said drugs, after giving such licensee reasonable notice and opportunity to be heard.

When licensee is
addicted to drugs.

Conviction.

Section 15. Whenever any physician, dentist, veterinarian, pharmacist, druggist, or registered nurse is convicted, in a court having jurisdiction, of any violation of this act, the license of such physician, dentist, veterinarian, pharmacist, druggist, or registered nurse may be revoked or suspended by the proper officers or boards having power to issue licenses to any of the foregoing classes, after giving such licensee reasonable notice and opportunity to be heard.

"License"
defined.

The term "license," as used in sections fourteen and fifteen of this act, shall be construed to include all licenses heretofore issued to any physician, dentist, veterinarian, pharmacist, druggist, or registered nurse, whether said license was issued by the officers or boards at present having power to issue the same, or whether granted under previous authority.

The term "officers or boards," as used in sections fourteen and fifteen of this act, shall be construed to designate such officers or boards as have power to issue licenses to physicians, dentists, veterinarians, pharmacists, druggists, or registered nurses at the time the power to revoke or suspend the license is exercised.

"Officers or boards" defined.

Section 16. The provisions of this act shall be enforced by the Department of Health of the Commonwealth of Pennsylvania; and for that purpose the Commissioner of Health is hereby authorized to establish, in the Department of Health, a bureau or division for such purpose, and to employ such assistants, stenographers, inspectors, clerks, and other employes as, in his opinion, may be necessary, and to fix their compensation. For the purpose of enforcing the provisions of this act the Commissioner of Health, and his assistants, either in said bureau or division, or any other bureau or division of his department, shall have the right to examine, at any time, any or all of the records required by this act to be kept; and the Commissioner of Health may further require persons dealing in, buying, selling, handling, or giving away drugs to make such reports to him, or to the bureau aforesaid, as he may deem necessary or advisable. This section shall not be construed to exclude the other duly constituted authorities in this Commonwealth from enforcing the provisions of this act.

Enforcement by State Department of Health.

To establish bureau or division.

Examination of records and reports.

Section 17. All acts and parts of acts inconsistent with this act are hereby repealed.

Repeal.

APPROVED—The 11th day of July, A. D. 1917.

MARTIN G. BRUMBAUGH.

No. 160.

AN ACT

Authorizing the establishment of contagious disease hospitals in the several counties of the Commonwealth, to be constructed and maintained out of county funds.

Section 1. Be it enacted, &c., That, from and after the passage of this act, hospitals for the care and treatment of persons suffering from contagious diseases may be constructed and maintained by counties in this Commonwealth.

Counties.

Contagious disease hospitals.

Section 2. Whenever, in the opinion of the county commissioners of any county, a hospital for the care of contagious diseases appears to be necessary or advisable, the said county commissioners may either locate such a hospital on the grounds of the county

Site

poor-farm or may purchase a suitable location in some other locality; provided such locality is not within, or close to, the built-up portion of any city, borough, or village, and not within one hundred (100) feet of any public highway.

Plans and specifications.

Section 3. Plans and specifications may be prepared for such hospital by the county commissioners or at their instance, which plans and specifications must be submitted to the Commissioner of Health of the Commonwealth of Pennsylvania for his approval, and must be so approved before the construction of any building is commenced.

Approv

Construction and equipment.

Section 4. Upon the plans and specifications being approved by the Commissioner of Health, the said hospital may be constructed and equipped in the same manner that other county buildings are constructed and equipped, and the expense and cost of such construction and equipment paid by the county commissioners out of county funds.

Payment.

Conduct and maintenance.

Section 5. After such hospital is erected and equipped and ready for occupancy, it shall be conducted and maintained, by and under the authority of the directors of the poor, in the same manner that the county-home and other county poor-buildings are conducted and maintained.

Expenses.

Section 6. All expenses incident to the construction and maintenance of contagious disease hospitals, established in accordance with the provisions of this act, shall be paid out of county funds, and no appropriations shall be made to such hospitals by the State.

Quarantine.

Section 7. In any county in which a hospital for the care and treatment of contagious diseases has been constructed and is being maintained, whenever, in the opinion of the health authorities,—either the local board or department of health of any city or borough in such county, or the State Department of Health,—proper quarantine measures cannot be otherwise enforced, the said health authorities may, for the protection of public health and the prevention of epidemics of disease, have authority to remove cases of contagious disease from private residences and other places to such hospital, for treatment and isolation during the continuance of such disease.

Removals.

APPROVED—The 24th day of May, A. D. 1917.

MARTIN G. BRUMBAUGH.

No. 221.

AN ACT

To prescribe the conditions under which public or private vaults, crypts, or mausoleums for the interment of human bodies may be constructed and maintained.

Section 1. Be it enacted, &c., That (1) after the passage of this act, the erection, construction, or building of any mausoleum, vault, crypt, or structure intended to hold or contain the bodies of the dead, shall be under the direct supervision of the State Department of Health, subject to the following conditions and provisions:

Private vaults,
crypts, etc. \

(2) Before commencing the erection of any mausoleum, vault, crypt, or structure to which the public has access, intended for interment of the dead, the person, firm or corporation intending to erect such structure shall first present to the State Department of Health, for examination and approval, detail plans and specifications of the mausoleum or vault to be erected. Such detailed plans and specifications shall in any and every case show the exact location, and provide for (a) a structure so arranged that every part thereof may be readily examined by any person regularly appointed to make such examination at any time during its construction; (b) that proper provision is made for permanently sealing each individual crypt after the placing of a dead body therein, and in such manner that no danger to the health of the community may arise therefrom; (c) that the materials used in the construction of the exterior of any such vault or mausoleum shall be in accordance with plans and specifications approved by the Department of Health, and shall be evidenced by a permit in writing signed by the State Commissioner of Health; and such signed approval, together with the detailed plans and specifications so approved, shall, before work is commenced on such structure, be filed in the office of the recorder of deeds of the county wherein such building is to be erected, and there remain as a public record.

Approval of De-
partment of
Health.

Plans and speci-
fications.

Record.

(3) The erection of such vault or mausoleum shall be under the supervision of an inspector appointed by the State Department of Health, and who shall be competent to perform such work and with a knowledge of such construction. The duty of such inspector shall be to see that the plans and specifications for such structure are complied with in every detail; the said inspector having full power to reject any materials of construction not fully up to the standard required in the plans and specifications, and it shall be obligatory that the inspector shall either accept or reject any portion of the work completed at the time of each in-

Inspector.

Report.

spection. A written report of such acceptance or rejection shall immediately be made to the person, firm, or corporation erecting such structure at the time such acceptance or rejection is made. No deviation from the original specifications shall be permitted, except that the internal arrangement of crypts within such structure may be changed if necessary.

Certificate.

(4) No mausoleum, vault, or crypt, as aforementioned, shall be used for the purpose of interring or depositing therein any dead bodies until there shall have been obtained from the State Department of Health a final certificate permitting such interment; such certificate to be filed with the recorder of deeds of the county in which such building is located.

State shall not be liable.

(5) It is distinctly understood that the Commonwealth of Pennsylvania shall in no way be held responsible for any liability resulting from any permit given by the Department of Health, as hereinbefore provided.

When act takes effect.

(6) This act shall take effect immediately: Provided, however, That it shall not apply to or affect any mausoleum or vault now in course of erection, or which shall have been wholly or partially sold, except as the burial of bodies is controlled by existing law.

Exemption from taxation.

(7) All mausoleums, vaults, crypts, or structures intended to hold or contain the bodies of the dead, now or hereafter erected, shall be exempt from taxation, in like manner as cemeteries are exempt by law.

APPROVED—The 23d day of June, A. D. 1917.

MARTIN G. BRUMBAUGH.

TOWNSHIP CODE.

CHAPTER XIV.

Sewers and Drains.

ARTICLE I.

In Townships of the First Class.

Section 1072. The commissioners shall make the necessary provision for the disposition of the sewage and drainage within, or for carrying the same beyond, the limits of the township; and, to this end, they are hereby authorized to enter into contracts with other municipalities and other corporations or persons, and to purchase, acquire, enter upon, take, appropriate, occupy, and use such lands, rights and interests therein, within the corporate limits of other townships or boroughs, as shall be necessary for the proper loca-

tion, construction, maintenance, use, and operation of sewer, main drains or disposal plants, including such lands, rights, and interests therein as shall be necessary for future additions to and enlargements of such sewage facilities, and as may be necessary to carry out the plans and specifications upon which a permit has been issued by the Commissioner of Health. In accordance with the provisions of the Act of April twenty-second, one thousand nine hundred and five, entitled "An act to preserve the purity of the waters of the State for the protection of the public health." Act of July 14, 1917.

No. 335.

A SUPPLEMENT

To an act approved the eighteenth day of May, one thousand nine hundred and eleven (Pamphlet Laws, three hundred and nine), entitled "An act to establish a public school system in the Commonwealth of Pennsylvania, together with the provisions by which it shall be administered, and prescribing penalties for the violation thereof; providing revenue to establish and maintain the same, and the method of collecting such revenue; and repealing all laws, general, special, or local, or any parts thereof, that are or may be inconsistent therewith."

Section 1. Be it enacted, &c., That the act approved the eighteenth day of May, one thousand nine hundred and eleven, entitled "An act to establish a public school system in the Commonwealth of Pennsylvania, together with the provisions by which it shall be administered, and prescribing penalties for the violation thereof; providing revenue to establish and maintain the same, and the method of collecting such revenue; and repealing all laws, general, special, or local, or any parts thereof, that are or may be inconsistent therewith," be supplemented by adding thereto the following:

Section 1511. Any school district may provide for the care and treatment of defective eyes and teeth of all pupils of its public schools.

School system.

1911, P. L. 309.

Hygiene.

Defective eyes and teeth.

APPROVED—The 17th day of July, A. D. 1917.

MARTIN G. BRUMBAUGH.

No. 154.

AN ACT

Authorizing courts of quarter sessions to commit the care of certain burial-grounds to township supervisors of townships and requiring townships to pay the expenses in connection therewith.

Township supervisors.

Neglected burial-grounds.

May be placed in care of supervisors.

Petition for keeping grounds in good condition.

Township to bear cost.

Open to the public

Section 1. Be it enacted, &c., That whenever any burial-ground is being neglected so as to become a nuisance, even though said burial-ground may occasionally be used for burial purposes, the court of quarter sessions of the county in which such burial-ground is situated may direct that such burial-ground be placed in care of the township supervisors of the township, under the direction and supervision of said court.

Section 2. That upon the petition of twenty-five or more citizens residing within a radius of five miles of any such burial-ground, to the court of quarter sessions, the said court may order and direct the township supervisors of the township to cut down, in the month of August of each year, all brush, grass, briars, and weeds growing in such burial-ground, and to remove the same, and place such grounds in good order and condition.

The cost thereof shall be paid out of the township treasury, but in no case shall the supervisors of any township expend more than fifteen dollars on any one cemetery, in any one year, for such purposes.

Section 3. Such burial-grounds shall remain open to the public, according to such regulations as may be made by the said court.

APPROVED—The 24th day of May, A. D. 1917.

MARTIN G. BRUMBAUGH.

No. 148.

AN ACT

To further amend an act, approved the third day of June, one thousand nine hundred and eleven, entitled "An act relating to the right to practice medicine and surgery in the Commonwealth of Pennsylvania; and providing a Bureau of Medical Education and Licensure as a bureau of the Department of Public Instruction; and means and methods whereby the right to practice medicine and surgery and any of its minor branches may be obtained, and exemptions therefrom; and providing for an appropriation to carry out the provisions of said act; and providing for revocation or suspension of licenses given by said bureau; and providing penalties for violation thereof, and repealing all acts or parts of acts inconsistent therewith," as amended by an act, approved the twenty-fifth day of July, one thousand nine hundred and thirteen, entitled "An act to amend title and sections three and four and five and six and nine and eleven of an act, entitled 'An act relating to the right to practice medicine and surgery in the Commonwealth of Pennsyl-

vania; and providing a Bureau of Medical Education and Licensure as a bureau of the Department of Public Instruction; and means and methods whereby the right to practice medicine and surgery and any of its minor branches may be obtained, and exemptions therefrom; and providing for an appropriation to carry out the provisions of said act; and providing for revocation and suspension of licenses given by said bureau, and providing penalties for violation thereof, and repealing all acts or parts of acts inconsistent therewith,' approved the third day of June, one thousand nine hundred and eleven," by providing for further instruction prior to examination for licensure, by clarifying sections five (5) and twelve (12).

Section 1. Be it enacted, &c., That section five of an act, entitled "An act relating to the right to practice medicine and surgery in the Commonwealth of Pennsylvania; and providing a Bureau of Medical Education and Licensure as a bureau of the Department of Public Instruction; and means and methods whereby the right to practice medicine and surgery and any of its minor branches may be obtained, and exemptions therefrom; and providing for an appropriation to carry out the provisions of said act; and providing for revocation or suspension of licenses given by said bureau; and providing penalties for violation thereof, and repealing all acts or parts of acts inconsistent therewith," approved the third day of June, Anno Domini one thousand nine hundred and eleven, which, as amended by an act, entitled "An act to amend title and sections three and four and five and six and nine and eleven of an act, entitled 'An act relating to the right to practice medicine and surgery in the Commonwealth of Pennsylvania; and providing a Bureau of Medical Education and Licensure as a bureau of the Department of Public Instruction; and means and methods whereby the right to practice medicine and surgery and any of its minor branches may be obtained, and exemptions therefrom; and providing for an appropriation to carry out the provisions of said act; and providing for revocation and suspension of licenses given by said bureau; and providing penalties for violation thereof, and repealing all acts or parts of acts inconsistent therewith, approved the third day of June, one thousand nine hundred and eleven," approved the twenty-fifth day of July, Anno Domini one thousand nine hundred and thirteen, reads as follows:—

"Section 5. Applicants for licensure under the provisions of this act shall furnish, prior to any examination by the said bureau, satisfactory proof that he or she is twenty-one years of age, is of good moral character, is not addicted to the intemperate use of alcohol or narcotic drugs, and has had a general education of not less than a standard four years' high school course, or its equivalent, and not less than one year of college credits in chemistry, biology, and physics,—all of which have been received before admission to medical study,—and have attended four graded courses of not less than thirty-two weeks of not less

Practice of medicine and surgery.

Section 5, act of June 3, 1911 (P. L. 639), as amended by act of July 25, 1913 (P. L. 1220), cited for amendment.

than thirty-five hours each, of actual work in didactic, laboratory, and clinical study, in different calendar years, in some reputable and legally incorporated medical school or college, or colleges, recognized as such by the Bureau of Medical Education and Licensure of the State of Pennsylvania, the dean or proper officer of which college having certified that the applicant has successfully passed each of said respective courses, and shall have completed a year as intern in a hospital which shall have at least twenty-five beds to each intern, devoted to the treatment of medical, surgical, gynaecological, and special diseases; shall maintain or establish cooperation with a maternity department or hospital, in which each intern shall have not less than six weeks' service, or the equivalent thereof, during which time he shall have attended or participated in the attendance upon not less than six confinements; shall maintain a thoroughly equipped, modern pathological and clinical laboratory, proportionate to the necessities of the hospital; and the records on file of the cases treated in said hospitals shall give evidence of the laboratory work so done by the intern; shall maintain a department of anaesthesia, consisting of one or more anaesthetists who shall have supervision over all the anaesthesia given in the institution, and whose duty it will be to instruct all interns in the administration of anaesthetics. Nothing in this act, however, shall be construed as applying to hospitals employing, on salary, graduate interns whose service is confined exclusively to the said institution. A school or college to be reputable under the meaning of this act must conform to the standard required in section three of this act.

"Applicants from countries foreign to the territory of the United States, who desire to be licensed by said bureau, shall, before examination, furnish similar proof as to age, moral character, use of alcohol and narcotics; and shall present a certificate or diploma indicating the completion of a preliminary and medical and surgical education equivalent to the above. Each application to the said bureau, for examination or licensure, shall have attached thereto the affidavit or affirmation of the applicant as to its verity. Any applicant stating any fact in his application, which shall thereafter be proven to be false, shall be deemed guilty of perjury, and on conviction shall be subject to its penalties." is hereby amended to read as follows:—

Applicant for
licensure.

Qualifications.

Section 5. Applicants for licensure under the provisions of this act shall furnish, prior to any examination by the said bureau, satisfactory proof that he or she is twenty-one years of age, is of good moral character, is not addicted to the intemperate use of alcohol or narcotic drugs, and has had a general education of not less than a standard four years' high school course, or

its equivalent, and not less than one year of college credits in chemistry, biology and physics,—all of which have been received before admission to medical study,—and have attended four graded courses of not less than thirty-two weeks of not less than thirty-five hours each, of actual work in didactic, laboratory, and clinical study, in different calendar years, in some reputable and legally incorporated medical school or college, or colleges, recognized as such by the Bureau of Medical Education and Licensure of the State of Pennsylvania, the dean or proper officer of which college having certified that the applicant has successfully passed each of said respective courses, and shall have completed *not less than* a year as an intern in *an approved* hospital which shall have at least twenty-five beds to each intern devoted to the treatment of medical, surgical gynaecological and special diseases; shall maintain or establish cooperation with a maternity department or hospital, in which each intern shall have not less than six weeks' service, or the equivalent thereof, during which time he shall have attended or participated in the attendance upon not less than six confinements; shall maintain a thoroughly equipped, modern pathological and clinical laboratory, proportionate to the necessities of the hospital; and the records on file of the cases treated in said hospitals shall give evidence of the laboratory work so done by the intern; shall maintain a department of anaesthesia consisting of one or more anaesthetists who shall have supervision over all the anaesthesia given in the institution, and whose duty it will be to instruct all interns in the administration of anaesthetics, *and, in the case of applicants of acceptable age and otherwise acceptable to the Federal Government, shall have received an approved three months' field course and service in military medicine.* Nothing in this act, however, shall be construed as applying to hospitals employing, on salary, graduate interns whose service is confined exclusively to said institution. A school or college to be reputable under the meaning of this act must conform to the standard required in section three of this act.

Hospitals.

Approval.

Standard.

Applicants from countries foreign to the territory of the United States, who desire to be licensed by said bureau, shall, before examination, furnish similar proof as to age, moral character, use of alcohol and narcotics; and shall present a certificate or diploma indicating the completion of a preliminary and medical and surgical education equivalent to the above. Each application to the said bureau, for examination or licensure, shall have attached thereto the affidavit or affirmation of the applicant as to its verity. Any applicant stating any fact in his application, which shall

Applicants from foreign countries.

Affidavit.

Perjury.

thereafter be proven to be false, shall be deemed guilty of perjury, and on conviction shall be subject to its penalties.

Section 2. Section twelve of said act, which reads as follows:—

Section 12, act of June 3, 1911 (P. L. 639), cited for amendment.

“The Bureau of Medical Education and Licensure shall refuse to grant a license, to practice medicine or surgery, to an applicant upon the presentation to said Bureau of Medical Education and Licensure of a court record showing the conviction, in due course of law, of said persons for producing, or aiding or abetting in producing, a criminal abortion or miscarriage, by any means whatsoever; and further, the Bureau of Medical Education and Licensure upon such evidence and proof, shall cause the name of *such convicted person, if a licentiate*, to be removed from the record in the office of the Superintendent of Public Instruction.

“The Bureau of Medical Education and Licensure may refuse, revoke, or suspend the right to practice medicine or surgery in this State for any or all of the following reasons; to wit, The conviction of a crime involving moral turpitude, habitual intemperance in the use of ardent spirits or stimulants, narcotics, or any other substance which impairs intellect and judgment to such an extent as to incapacitate for the performance of professional duties.

“Any person who is a *licentiate under this act*, or who is an applicant for examination for licensure to practice medicine or surgery in this State, against whom are preferred any of the foregoing charges for causing the revocation or suspension of license, or for causing refusal of the right to be examined for licensure, shall be furnished by the Bureau of Medical Education and Licensure with a copy of the complaint; and shall have a hearing before the Bureau, or by attorney, and witnesses may be examined by said bureau respecting the guilt or innocence of said accused. The suspension of license of any *licentiate under this act* shall be removed when said narcotic or vicious habit hereinbefore specified, shall have been adjudged by the said bureau to be cured or overcome, and said suspended licentiate deemed capable of practicing his or her profession,” is hereby amended to read as follows:—

Refusal of license to criminal practitioner.

The Bureau of Medical Education and Licensure shall refuse to grant a license, to practice medicine *and* surgery, to an applicant upon the presentation to said Bureau of Medical Education and Licensure of a court record showing the conviction, in due course of law, of said person for producing, or aiding or abetting in producing, a criminal abortion or miscarriage, by any means whatsoever; and, further, the Bureau of Medical Education and Licensure, upon such evidence and proof, shall cause the name of *any physician licensed*

to practice medicine and surgery, in the Commonwealth of Pennsylvania, to be removed from the record in the office of the Superintendent of Public Instruction.

The Bureau of Medical Education and Licensure may refuse, revoke, or suspend the right to practice medicine *and surgery*, in this State for any or all of the following reasons; to wit, The conviction of a crime involving moral turpitude, habitual intemperance in the use of ardent spirits or stimulants, narcotics, or any other substance which impairs intellect and judgment to such an extent as to incapacitate for the performance of professional duties.

Reason for refusing, revoking or suspending license.

Any person who is *licensed to practice medicine and surgery, or any of its branches, in the Commonwealth of Pennsylvania*, or who is an applicant for examination for licensure to practice medicine *and surgery*, in this State, against whom are preferred any of the foregoing charges for causing the revocation or suspension of license, or for causing refusal of the right to be examined for licensure, shall be furnished by the Bureau of Medical Education and Licensure with a copy of the complaint; and shall have a hearing before the bureau, or by attorney, and witnesses may be examined by said bureau respecting the guilt or innocence of said accused. The suspension of license of any *person licensed to practice medicine and surgery*, shall be removed when said narcotic or vicious habit, hereinbefore specified, shall have been adjudged by the said bureau to be cured or overcome, and said suspended licentiate deemed capable of practicing his or her profession.

Preferred charges.

Hearing.

APPROVED—The 24th day of May, A. D. 1917.

MARTIN G. BRUMBAUGH

No. 10.

AN ACT

Defining optometry; and relating to the right to practice optometry in the Commonwealth of Pennsylvania, and making certain exceptions; and providing a Board of Optometrical Education, Examination, and Licensure, and means and methods whereby the right to practice optometry may be obtained; and providing for the means to carry out the provisions of this act; and providing for revocation or suspension of licenses given by said board, and providing penalties for violations thereof; and repealing all acts or parts of acts inconsistent therewith.

Whereas, The eyesight of the citizens of this Commonwealth is endangered by incompetent persons practicing optometry, and due regard for the safety and

Preamble.

protection of the citizens demands that only authorized and qualified optometrists shall be permitted to practice optometry:—

Optometry.

Definition.

Section 1. Be it enacted, &c., That the practice of optometry is hereby defined to be the employment of any means, other than the use of drugs, for the measurement of the powers of vision and the adaptation of lenses for the correction and aid of the vision of human beings.

Unlawful practice.

Section 2. That, on and after January first, one thousand nine hundred and eighteen, it shall not be lawful for any person in this Commonwealth to engage in the practice of optometry or to hold himself out as a practitioner of optometry, or to attempt to determine by an examination of the eye the kind of glasses needed by any person, or to hold himself out as a licensed optometrist when not so licensed, or to hold himself out as able to examine the eyes of any person for the purpose of fitting the same with glasses, excepting those hereinafter exempted, unless he has first fulfilled the requirements of this act, and has received a certificate of licensure from the Board of Optometrical Education, Examination, and Licensure created by this act; nor shall it be lawful for any person in this Commonwealth to represent that he is the lawful holder of a certificate of licensure, such as is provided for in this act, when, in fact, he is not such lawful holder, or to impersonate any licensed practitioner of optometry, or to fail to deliver the certificate provided for in section six of this act.

Violations.

Fine and penalty.

Any person violating the provisions of this section shall be deemed to be guilty of a misdemeanor, and shall upon conviction be subject, upon his first offense, to a fine of not more than five hundred dollars, or imprisonment for not more than six months in the county prison, or both or either, at the discretion of the court; and, upon conviction on second or later offenses, shall be subject to a fine of not less than five hundred dollars, nor more than one thousand dollars, and imprisonment for not less than six months nor more than one year, at the discretion of the court.

Establishment of the Board.

Appointment.

Certificate.

Section 3. For the purpose of carrying out and enforcing the provisions of this act, there shall be established in this Commonwealth a board, which shall be known as the Board of Optometrical Education, Examination, and Licensure of the Commonwealth of Pennsylvania. The said board shall consist of seven members, who shall be appointed by the Governor of the Commonwealth on or before July first, nineteen hundred and seventeen. Each member shall receive a certificate of his appointment, signed by the Governor and attested by the Secretary of the Commonwealth. The members of this board shall be optometrists, citizens of this Commonwealth, who possess the requisite

qualifications to practice optometry under this act, and who shall have been so practicing in this State during the five years next previous to their appointment. Two members of the board first appointed under this act shall serve for one year, two for two years, and three for three years, after which the successor of each member shall be appointed for the term of three years; but no member of said board shall be a member of the faculty of any undergraduate school or college teaching optometry. The first appointees shall by virtue of such appointment, receive certificates of licensure without examination. The Governor shall, by appointment, fill all vacancies caused by death, resignation, or otherwise; and may remove any member of said board for continued neglect of his duties in connection therewith, or for any unprofessional or dishonorable conduct. Appointments to fill vacancies shall be for the unexpired term of the deceased or retiring member. The board herein created is hereby charged with the enforcement of this act.

All suits for the recovery of the penalties prescribed in this act shall be prosecuted in the name of the State of Pennsylvania, in any court having jurisdiction; and it shall be the duty of the prosecuting attorney of the county where such offense is committed to prosecute all the persons violating the provisions of this act, upon proper complaint being made.

Section 4. Said board shall effect its organization, immediately after the appointment of its members by the Governor, by holding a meeting at which it shall elect from its membership a president, and a secretary, who shall also be treasurer. It shall have authority to make rules and regulations, not inconsistent with the laws of this Commonwealth, for the transaction of its business, and for the registration of all optometrists of this Commonwealth, and for conducting examination of applicants. Said rules shall be printed in pamphlet form for public distribution. Five members shall constitute a quorum for the transaction of all business, except for the revocation or suspension of a certificate of licensure, or the determination of the fitness of any school or college to render eligible its graduates for licensure, when the consent of a majority of the whole board shall be necessary. No license shall be granted under this act except with the approval of at least four members of the board. Said board shall meet at least twice a year, at Harrisburg. Any member may administer oaths and take testimony when appointed so to do by the board. The appointed members shall receive compensation at the rate of ten dollars and necessary expense for each day actually devoted to the work of the board.

Section 5. Every person desiring to commence the practice of optometry, or, if now in practice, to con-

Qualification of members.

Terms of office.

Vacancies.

Removal.

Suits to recover penalties.

Duty of district attorneys.

Organization of the Board.

Officers.

Rules and regulations.

Pamphlets.

Quorum.

Meetings.

Compensation.

Examinations. continue the practice thereof after January first, one thousand nine hundred and eighteen, except as herein otherwise provided, shall take the examination provided in this act, and satisfy the other requirements hereof as here provided. Any person who has been engaged in the practice of optometry in this Commonwealth for two full years prior to the passage of this act, or, for one year in this, and for the year preceding it in another State, and is of good character, shall be entitled to take a limited examination covering the following only:

- Eligibility.
- Limitations.
- (a) The limitation of the sphere of optometry;
 - (b) The necessary scientific instruments used;
 - (c) The form and power of lenses used;
 - (d) A correct method of measuring presbyopia, hypermetropia, myopia and astigmatism;
 - (e) The writing of formulae or prescriptions for the adaptation of lenses in aid of vision.

Any person over the age of twenty-one years, of good moral character, who has had a preliminary education equivalent to two years of the course of high school whose standard is approved by the bureau of Professional Education of the Department of Public Instruction,—which preliminary education shall be ascertained by examination, or by acceptable certificate as to credentials for work done in such approved institution,—and has graduated from a school or college of optometry, approved by the Board of Optometrical Education, Examination, and Licensure, which maintains a course in optometry of not less than two years, and has afterwards studied optometry for at least one year in a licensed optometrist's office, shall be entitled to take a standard examination. Said standard examination shall consist of tests in practical, theoretical, and physiological optics, in theoretical and practical optometry, and in the anatomy and physiology of the eye, and in pathology as applied to optometry: Provided, That any person, not less than twenty-one years of age, who is actually engaged in the practice of optometry at the time of the passage of this act, shall be entitled to take the standard examination, merely upon proof to the board that he is of good moral character and is not addicted to the intemperate use of alcohol or narcotic drugs.

Section 6. Every person desiring to be licensed, as in this act provided, shall file with the secretary of said board, upon appropriate blank to be furnished by said secretary, an application, verified by oath, setting forth the facts which entitle the applicant to examination and licensure under the provisions of this act. The said board shall hold at least two examinations each year. In case of failure at any standard examina-

Standard examination.

Proviso.

Eligibility of applicants.

Filing of application.

Examination.

tion, the applicant, after the expiration of six months and within two years, shall have the privilege of a second examination by the board, without the payment of an additional fee. In case of failure at any limited examination, the applicant shall have the privilege of continuing the practice of optometry, and of taking a second examination without the payment of an additional fee. But, in the event of his failure to pass the second examination on or before July first, one thousand nine hundred and eighteen, he shall thereafter cease to practice optometry in this Commonwealth. Every applicant who shall pass the standard examination or the limited examination, as the case may be, and who shall otherwise comply with the provisions of this act, shall receive from the said board, under its seal, a certificate of licensure entitling him to practice optometry in this Commonwealth; which certificate shall be duly registered in a record book to be properly kept by the secretary of the board for that purpose, which shall be open to public inspection; and a duly certified copy of said record shall be received as evidence in all courts of this Commonwealth in the trial of any case. Each person to whom a certificate shall be issued by said board shall keep said certificate displayed, in a conspicuous place, in the office or place of business wherein said person shall practice optometry, together with the photograph of said person attached to the lower right-hand corner of said certificate, and shall whenever required exhibit the said certificate, to any member or agent of the said board. Peddling from door to door, or the establishment of temporary offices, is specifically forbidden, under penalty of revocation of certificate by said board. Whenever any person shall practice optometry outside, or away from his office or place of business, he shall deliver to each person fitted with glasses by him a certificate, signed by him, wherein he shall set forth the amount charged, his post-office address, and the number of his certificate. Each person to whom a certificate has been issued by said board shall, before practicing under the same, register said certificate in the office of the prothonotary in each county wherein he proposes to practice optometry, and shall pay therefor such fee as may be lawfully chargeable for such registry. The prothonotary in each county shall keep a certificate registration book, wherein he shall promptly register each certificate for which the fee is paid.

Section 7. Said Board of Optometrical Education, Examination, and Licensure shall charge the following fees for examination, registration, and renewals of certificates: The sum of twenty-five dollars for a standard examination, and ten dollars for a limited ex-

In case of failure.

Certificate of licensure.

Record.

Evidence.

Display of certificate.

Peddling, etc.

Outside practice.

Registration of certificate.

Duty of prothonotaries.

Fees.

Renewal registra-
tion fee.

amination. Every registered optometrist who desires to continue the practice of optometry shall annually, on or before the first day of January, pay to the secretary of the board a renewal registration fee of two dollars per annum, for which he shall receive a renewal of his certificate.

Revocation.

In case of neglect to pay the renewal registration fee herein specified, the board may revoke such certificate, and the holder thereof may be reinstated by complying with the conditions specified in this act. But no certificate or permit shall be revoked without giving sixty days' notice to the delinquent, who, within such period, shall have the right of renewal of such certificate, on payment of the renewal fee with a penalty of five dollars: Provided, That retirement from practice for a period not exceeding five years shall not deprive the holder of said certificate of the right to renew his certificate on the payment of all lapsed fees.

Proviso.

Seal, etc.

Office.

The board shall adopt a seal and certificate of suitable design, and shall have an office at Harrisburg, in this Commonwealth, where examinations may be held, and where all its permanent records shall be kept, which shall be open to public inspection. It shall have power to make requisition upon the proper State officials for office rooms, and supplies, including stationery and furniture. All printing and binding necessary for the work of the said board shall be done by the State Printer, upon an order issued by said board, through its president and secretary, to the Superintendent of Public Printing and Binding.

Printing and sup-
plies.

Disposition of
fees.

Section 8. All fees received by said board for examination, or from any other source, shall be utilized in regulating the practice of optometry and paying the expenses of the board, including necessary clerk hire, as provided for in this act; any surplus to be turned over to the State Treasurer at least once in each twelve months. An annual audit of the accounts of the board shall be made by the Auditor General of the Commonwealth. The treasurer of said board shall give a bond to the Commonwealth of Pennsylvania, in the sum of two thousand five hundred dollars, for the faithful performance of his duties; said bond to be approved by the Board of Optometrical Education, Examination, and Licensure, and by the Attorney General of the Commonwealth, who shall be custodian of the bond.

Audit.

Bond of treasurer.

Refusal of li-
cense, revocation
of certificate, etc.

Section 9. The Board of Optometrical Education, Examination, and Licensure shall refuse to grant a certificate of licensure to any applicant, and may cancel, revoke, or suspend the operation of any certificate by it granted, for any or all of the following reasons; to wit,—The conviction of a crime involving moral turpitude, habitual intemperance in the use of ardent spirits or stimulants, narcotics, or any other substance which impairs the intellect and judgment to such an

extent as to incapacitate for the performance of the duties of an optometrist. The certificate of licensure of any person convicted of a violation of section two of this act shall be ipso facto revoked.

Any person who is the holder of a certificate of licensure, or who is an applicant for examination for a certificate of licensure, against whom is preferred any charge, shall be furnished by the board with a copy of the complaint, and shall have a hearing before the board, at which hearing he may be represented by counsel. At such hearing witnesses may be examined for and against the accused respecting the said charges, which examination shall be conducted in the manner usually followed in the taking of testimony before commissions in this Commonwealth. The suspension of a certificate of licensure, by reason of the use of stimulants or narcotics, may be revoked when the holder thereof shall have been adjudged by the said board to be cured and capable of practicing optometry.

Section 10. An applicant for a certificate of licensure who has been examined by the State Board of Optometrical Examiners of another State, which through reciprocity similarly accredits the holder of a certificate issued by the Board of Optometrical Education, Examination, and Licensure of this Commonwealth to the full privileges or practice within such State, shall, on the payment of a fee of twenty-five dollars to the said board, and on filing in the office of the board a true and attested copy of the said license, certified by the president or secretary of the State board issuing the same, and showing that the standard of requirements adopted and enforced by said board is equal to that provided for by this act, shall, without further examination, receive a certificate of licensure: Provided, That such applicant has not previously failed at an examination held by the Board of Optometrical Education, Examination, and Licensure of this Commonwealth.

Section 11. Nothing in this act shall be construed as conferring on the holder of any certificate of licensure issued by said board the title of doctor, oculist, ophthalmologist, or any other word or abbreviation indicating that he is engaged in the practice of medicine or surgery, or the treatment or diagnosis of diseases of or injuries to the human eye, or the right to use drugs or medicines in any form for the treatment or examination of the human eye.

Section 12. The provisions of this act shall not apply: (a) To the physicians or surgeons practicing under authority of license issued, under the laws of this Commonwealth, for the practice of medicine or surgery; or (b) To persons selling spectacles and eyeglasses, but who do not assume, directly or indirectly,

Charges.

Hearing.

Practitioners licensed by other States.

Fee.

proviso.

This act construed.

Application of this act.

When act shall
take effect.

Number and
gender.

Repeal.

to adapt them to the eye, nor neither practice or profess to practice optometry.

Section 13. This act shall take effect and be in full force from the date of the appointment of the said board by the Governor as herein provided.

Section 14. Whenever in this act the singular number is used, it shall be interpreted as meaning both singular and plural, if compatible with the sense of the language used, and vice versa; and wherever in this act the masculine gender is used, it shall be construed as comprehending also the feminine gender.

Section 15. All acts or parts of acts inconsistent with this act are hereby repealed; it being intended that this act shall furnish a complete and exclusive system, of and in itself, for obtaining the right to practice optometry in the Commonwealth of Pennsylvania, and for the regulation of the practice of optometry therein.

APPROVED—The 30th day of March, A. D. 1917. In approving this bill I am not unmindful of the fact that on May 1, 1915, I withheld my approval of a bill that proposed to regulate the practice of optometry in Pennsylvania, I am still of the opinion therein set forth, but this bill now before me for action has been so drawn as to remove some of the cardinal objections to the bill. In twenty-eight States the practice of optometry is now regulated by a similar law. The uniform testimony is that the law operates beneficently. The controlling motive in the present approval of this act is my desire to drive the fakers and scoundrels who now prey upon an unsuspecting people from the Commonwealth. I express the hope that in the next session of the Assembly the qualifications for admission to the study of optometry may be placed upon a higher educational basis and that the courses of study leading to a license may be made dignified, thorough, and adequate to the power given by the Assembly to these optometrists.

MARTIN G. BRUMBAUGH.

PENNSYLVANIA HEALTH BULLETINS.

1.	July,	1909.	The Disease-Breeding Power of House-flies; Method of Prevention.
2.	Aug.,	1909.	Note on the Similarity of Barium Carbonate Poisoning and Rabies in Dogs.
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9.	March,	1910.	Conservation of Human Life in Pennsylvania. The Results of Four Years' Work of the Department.
10.	April,	1910.	The Biological Treatment of Tuberculosis as Conducted by the Department.
11.	May,	1910.	The Bubonic Plague, its Origin, Progress, and Means of Prevention.
12.	June,	1910.	A Retrospective Glance. 1. Susceptibility to Tuberculosis. 2. Purity of Milk. 3. Bovine Tuberculosis.
13.	July,	1910.	Experiments on Tubercle Bacilli, Old Tuberculin, and the Fluid of Dixon.
14.	Aug.,	1910.	The Conservation of Child Life in Pennsylvania.
15.	Sept.,	1910.	Obedience to Nature's Laws the Primary Defence against Disease.
16.	Oct.,	1910.	The Conservation of Infant Life in Pennsylvania.
17.	Nov.,	1910.	Pennsylvania's Standing Army of Health.
18.	Dec.,	1910.	Producers and Consumers. Pennsylvania's Tuberculosis Schools.
19.	Jan.,	1911.	The Effect of Injections of Taurin upon Tumors of Mice and Dogs.
20.	Feb.,	1911.	Some Duties, Ideals, and Opportunities of the Country Doctor.
21.	March,	1911.	Malaria: How it is Caused, and How to Get Rid of it.
22.	April,	1911.	Health.
23.	May,	1911.	The Common Fly. How it Develops. Why it must be Destroyed, and How to Destroy it.
24.	June,	1911.	Effects of Products of Tubercle Bacilli on Epithelium.
25.	July,	1911.	Five Years of Tuberculosis in Pennsylvania.
26.	Aug.,	1911.	Organization of the Pennsylvania State Department of Health.
27.	Sept.,	1911.	Tuberculosis, in the Country as well as in the City, a Disease of Bad Housing and Lack of Nourishing Food.
28.	Oct.,	1911.	The Preparation of the Biological Products Distributed by the Pennsylvania Department of Health.
29.	Nov.,	1911.	The Foundations of State Medicine.
30.	Dec.,	1911.	Experiments Tending to show the Infrequency of the Occurrence of Tubercle Bacilli in the Urine of Patients Suffering from Pulmonary Tuberculosis.
31.	Jan.,	1912.	The Baby the Most Important Problem in Modern Life.
32.	Feb.,	1912.	Insects. The Common Forms in Relation to Public Health, and Methods for their Destruction.
33.	March,	1912.	The Opportunities for the Trained Nurse in Sanitary Service.
34.	April,	1912.	How to Organize a Baby-Saving Show.
35.	May,	1912.	Drowning.
36.	June,	1912.	The Health of Suburban Residences.
36½.	July,	1912.	Report of the Austin Disaster.
37.	Aug.,	1912.	Getting Close to the People. Caring for the School Children.
38.	Sept.,	1912.	Modern Medicine and the Physician.
39.	Oct.,	1912.	Battling for Health at Mont Alto.
40.	Nov.,	1912.	Tuberculin.
41.	Dec.,	1912.	Conservation of Health. An address.
42.	Jan.,	1913.	Municipal Sanitation.
43.	Feb.,	1913.	Tuberculosis and Our Schools.
44.	March,	1913.	The Relation of the Undertaker to the Public Health.
45.	April,	1913.	What State Control over Streams has done in Pennsylvania in seven years.
46.	May,	1913.	Troy Typhoid Fever Epidemic.
47.	June,	1913.	The Registration of Vital Statistics a Social Service.
48.	July,	1913.	Pennsylvania's Eugenic Marriage Law.
49.	Aug.,	1913.	Pennsylvania Health Legislation of 1913.
50.	Sept.,	1913.	Health and Education. An address.
51.	Oct.,	1913.	Relation of Public Health to Industrial Welfare. An address.
52.	Nov.,	1913.	Bathing.
53.	Dec.,	1913.	Results from the Injection of the Wax of the Tubercle Bacillus Indicating its Influence on Immunity and Susceptibility to the Tubercle Bacillus.
54.	Jan.,	1914.	The Waters of Pennsylvania. An address.
55.	Feb.,	1914.	Reproduction and Race Betterment.
56.	March,	1914.	The State Tuberculosis Dispensary as a Social Service in Pennsylvania.
28.	Rev. April,	1914.	The Preparation of the Biological Products Distributed by the Pennsylvania Department of Health.
57.	May,	1914.	Insanitary Bath Tubs and Lavatories.
58.	June,	1914.	On Housing.
59.	July,	1914.	Medical and Sanitary Inspection of Schools of Fourth Class Districts in Pennsylvania.
60.	Aug.,	1914.	Progress in Preventive Medicine in Pennsylvania since the Creation of a State Department of Health.
61.	Sept.,	1914.	Certain Standards for Tuberculosis Dispensaries.
62.	Oct.,	1914.	On the Upfollow of Sanatorium Patients.
63.	Nov.,	1914.	Effective Rural Sanitation. End Results.
64.	Dec.,	1914.	Pennsylvania's System of Tuberculosis Dispensaries.
65.	Jan.,	1915.	Present Organization of the State Department of Health.
66.	Feb.,	1915.	Notes on Typhoid Fever in Pennsylvania for the Past Nine Years.
67.	March,	1915.	Epidemic of Typhoid Fever in Skippackville and Vicinity.
68.	April,	1915.	Diphtheria and Diphtheria Antitoxin.
69.	May,	1915.	Flies as a Factor in Infant Mortality.
70.	June,	1915.	Pennsylvania Health Legislation of 1915.
71.	July,	1915.	On the Medical Inspection of 469,000 School Children in Pennsylvania.
72.	Aug.,	1915.	The Sanitary Engineer in Public Health Work.
73.	Sept.,	1915.	Quarantine of the Home as Practised by the Department of Health.
74.	Oct.,	1915.	An Address before the Pennsylvania Water Works Association.
75.	Nov.,	1915.	An Address at the Laying of a Corner-Stone in Pittsburgh.
76.	Dec.,	1915.	On the Prevalence of Typhoid Fever in Philadelphia in the Autumn of 1915.

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| 77. | Jan., | 1916. | The Pennsylvania Department of Health Exhibit at the Panama-Pacific International Exposition. |
| 78. | Feb., | 1916. | The Sanitary Index. A Method of Measuring Public Health Work. |
| 79. | March, | 1916. | Proper Housing Means Cleanliness. An Address in the Conference of the Pennsylvania Housing and Town-Planning Association. |
| 80. | April, | 1916. | Pennsylvania and Her Municipalities. An address before the State Association of Boroughs. |
| 81. | May, | 1916. | The Department of Health Laboratory, and what it has done for the Physicians of the State. Read before the Schuylkill County Medical Society. |
| 82. | June, | 1916. | Fifteen Little Talks on Health and Hygiene. |
| 83. | July, | 1916. | Fifteen Little Talks on Health and Hygiene. |
| 84. | Aug., | 1916. | Fifteen Little Talks on Health and Hygiene. |
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| 88. | Dec., | 1916. | Fifteen Little Talks on Health and Hygiene. |
| 89. | Jan., | 1917. | Little Talks on Health and Hygiene. |
| 90. | Feb., | 1917. | Little Talks on Health and Hygiene. |
| 91. | March, | 1917. | Little Talks on Health and Hygiene. |
| 92. | April, | 1917. | Little Talks on Health and Hygiene. |
| 93. | May, | 1917. | Insects. |
| 94. | June, | 1917. | Typhoid and Typhophors. |
| 95. | July, | 1917. | Infantile Paralysis. |
| 96. | Aug., | 1917. | Administration in Typhoid Epidemics, as carried out by the Pennsylvania State Department of Health. |
| 97. | Sept., | 1917. | Pennsylvania Health Legislation of 1917. |

Note:—Owing to the exhaustion of the supply, Bulletins of the above list bearing the numbers:—7, 9, 10, 33, 39, 49, are no longer available for distribution.

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PENNSYLVANIA

Health Bulletin

No. 98

HARRISBURG, PA.

October, 1917

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PUBLISHED MONTHLY BY
THE STATE DEPARTMENT OF HEALTH
SAMUEL G. DIXON, M. D., LL. D., Sc. D.,
COMMISSIONER.

PRESIDENT'S ADDRESS
Annual Meeting—Pennsylvania State Medical Society
by
SAMUEL G. DIXON
Harrisburg

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October 1917.

PRESIDENT'S ADDRESS.*

Samuel G. Dixon, M. D., LL. D., Sc. D.,
Harrisburg.

This year is probably to be a portentous one in the history of the medical world; one in which our society, in common with the whole medical profession in this country, will be much handicapped because of the loss from home of our men who offered their unqualified services and were accepted and sent abroad, before our home army had made known the character of the medical talent that would be necessary to keep up basic supply.

A great responsibility rests on the home army to produce and at the same time retain our ability to continue producing more than ever before those things essential for our own sustenance and to sustain the fighters at the front. This means that we must have intelligent and vigilant medical work continued in this great Commonwealth of ours as well as behind the trenches.

Pennsylvania has not been rich in medical men. In fact before this cruel war was dreamed of by the masses of the civilized world, we were feeling our poverty. For several years the Department of Health has been receiving requests from communities throughout the State asking for resident physicians. Some of the letters contain statements that the writers represent intelligent rural communities with sufficient means to pay for medical service. We have not been able to supply the demand.

Today we are also suffering in our great centers of population, as well as in outlying districts, and even our medical charity work in hospitals situated near the great munition plants is suffering because its medical equipment has been curtailed by the war.

We cannot imagine what a sad thing it would be for those at the front if our munition works had to be closed for any reason whatsoever. It is our problem to see that their work is not curtailed or

*Read by Dr. John B. McAlister at the General Meeting of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 25, 1917.

stopped because of epidemics of disease and insufficient medical attention. Of course, the philanthropic spirit of our medical men will not permit us to anticipate such a disaster, somehow we will prevent it, but the illustration may serve the point I wish to bring out; namely, the necessity that the military army and the home army which must furnish it the necessary supplies, must work together, and in so doing we must distribute our medical talent where it can accomplish the greatest good with the least danger to either arm of our national strength.

Up to the present time I feel that the fighting front has made application of our most precious metal where others less vital to the interests of our Commonwealth could have answered the call. I do not mean to imply that this is an extreme condition, or one which may continue, but it appears certain that thus far there has not been a nice adjustment of our medical resources between the two great forces which must be equally conserved.

The powerful military organization of our government will care for those who are fighting our battles in Europe, we at home have on our hands the lives and health of our eight million citizens scattered over the forty-five thousand square miles of territory of our great Commonwealth. We have found it a formidable task in time of peace, and now in time of war, with our medical forces so greatly depleted, it is plain that we must find a way to increase the efficiency of those who are left and gradually to recruit our numerical losses. These problems must be considered by the Medical Society of the State of Pennsylvania, by the State Bureau of Medical Education and Licensure, and by our great medical educational institutions. They are so essential to reinforce our medical wants that I urge you to refer the subjects to a proper committee to consider and report on a method best to accomplish the object.

It should be the special aim of this society to use its influence and its knowledge of conditions throughout the State to secure an equitable distribution between those who are to go and those who are to remain, that no district should be left entirely unprotected, and that everywhere some one who has attained prominence in our profession might be reached as a consultant in serious need. In this work the county societies, having yet a more intimate knowledge of local conditions, should join, and the State and county should act in harmonious conjunction with those special bodies created by our President and Governor to pass on questions involving which ones should be taken.

In order that the immediate problems which confront our society may be met, and its necessary activities sustained, we certainly must have an endowment fund, or a fund perhaps with a title more liberal than that of endowment. Emergencies might demand spending from the principal as well as the interest, and, therefore, it seems to me that the power to decide on the spending of the money should be left with the proper committee of our society in charge of such work.

Perhaps we must have more government aid satisfactorily to fill the demand that is being put on us. When the poor man knocks at the door of our modernly educated physician, who, in order that he may be there and answer, must support himself and perhaps his

family, he brings with him a question which will perplex the individual practitioner. The call must be answered, perhaps not only for the need of him who knocks, but the welfare of the community may be in jeopardy.

The growth of our great industries and the congestion of our population in great centers have largely increased such calls on the practitioner, and the war may add many more, so that it is a condition that demands our consideration; on the other hand, while our government may aid, it cannot provide such fees as the modern medical man is accustomed to receive from his well-to-do patients and which, as a matter of fact, the cost of his education and the standard of living which he is expected to keep up fully justify.

The young man who contemplates entering on a medical training, especially in times such as these, must not deceive himself by imagining that his path will be strewn with gold. If he has any such delusions and feels that financial success will be essential to his happiness, he had better find some other profession or business for his life work.

Our Bureau of Medical Education and Licensure might consider leaving off some of the frills of our educational requirements, at least during this time of emergency. For instance, even before the war we found very little necessity for our practicing physicians to be versed in modern languages. There was so much medical literature coming from the great educational centers of the world that trained linguists found it profitable to translate them with all their medical idioms, with the result that there is open to every physician an up-to-date library of translations far more dependable, than even with the required education in modern languages, they could possibly ever hope to have obtained by reading these various productions in their original tongues.

Our medical educational institutions might materially assist in the recruiting of embryonic medical men to fill hereafter our broken ranks by modifying our present standards for admission to the medical schools. It has always been a question with me whether or not our standard is too high. I believe we may be preventing many geniuses from entering the ranks of our profession. The elder Gross many years ago was called on to speak to the trustees of the Jefferson Medical College in regard to raising the standard for admission to that school. In his address he asked them what would have become of him had such a standard for admission as was then being considered been in vogue in his day.

If we look around over the medical and other professions, we find that those who have risen highest were not born with gold spoons in their mouths and had unlimited assistance of tutors to help them through their course in medicine, law, or whatever their chosen profession might have been, but rather men who have had the advantage and disadvantage of a practical education, seasoned with hardships and accomplished by the stress of their own determination. To many of these, like Gross, the doors of our modern institutions would be closed.

If modern medicine is to advance during the new year as it has in the recent past, it is quite possible that the government may find it necessary to form a little medical army of civil physicians to serve the general public. With the tremendous task now facing our nation,

it is more than ever necessary that both our military and our industrial armies be protected from communicable disease. As a measure of preparedness this is below and at the foundation of our national endeavor.

Scientific medicine had advanced to a high standard, and now with the stimulus of necessity great achievements are possible, not only in diagnosing and treating, but also in preventing disease.

No doubt there are many other important matters which might be brought to the attention of this society, if it were not that the public mind is at the present time drawn to the one great national crisis into which we have been thrown. There is no hope that the coming year will bring us back to the ordinary interests of peace, therefore, in order that we may not be confused, feeling fully convinced that the present great issue will need all our efforts during the coming year. I leave those other matters to future presidents who may assume this honorable chair when we are no longer at war.

The society has been from early years identified with all that is noble in the history of medicine. We have fought battles for many a good cause and we have been vigorous in our prosecution of scientific investigation and education.

There is not a State which can boast of higher medical standards than Pennsylvania, and we should be proud that our membership is fulfilling the tradition of service and sacrifice, as it has done through all the years, so that Pennsylvania's contribution to the National cause along medical lines may be as significant and valuable as it has been in the past.

I am glad of having been recognized by those working with me in the same profession and hope to be able to take up my full activities in life within a very short time and exercise my humble ability to advance the interests of our society. This, however, can only be done by the cooperation of its members and with the help of the officers who have had practical experience in the duties I take up with this meeting, for they are the best judges of the character of our labors.

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10.	April,	1910.	The Biological Treatment of Tuberculosis as Conducted by the Department.
11.	May,	1910.	The Bubonic Plague, its Origin, Progress, and Means of Prevention.
12.	June,	1910.	A Retrospective Glance. 1. Susceptibility to Tuberculosis. 2. Purity of Milk. 3. Bovine Tuberculosis.
13.	July,	1910.	Experiments on Tubercle Bacilli, Old Tuberculin, and the Fluid of Dixon.
14.	Aug.,	1910.	The Conservation of Child Life in Pennsylvania.
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28.	Oct.,	1911.	The Preparation of the Biological Products Distributed by the Pennsylvania Department of Health.
29.	Nov.,	1911.	The Foundations of State Medicine.
30.	Dec.,	1911.	Experiments Tending to show the Infrequency of the Occurrence of Tubercle Bacilli in the Urine of Patients Suffering from Pulmonary Tuberculosis.
31.	Jan.,	1912.	The Baby the Most Important Problem in Modern Life.
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34.	April,	1912.	How to Organize a Baby-Saving Show.
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36.	June,	1912.	The Health of Suburban Residences.
37.	July,	1912.	Report of the Austin Disaster.
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39.	Sept.,	1912.	Modern Medicine and the Physician.
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78.	Dec.,	1915.	On the Prevalence of Typhoid Fever in Philadelphia in the Autumn of 1915.

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| 77. | Jan., | 1916. | The Pennsylvania Department of Health Exhibit at the Panama-Pacific International Exposition. |
| 78. | Feb., | 1916. | The Sanitary Index. A Method of Measuring Public Health Work. |
| 79. | March, | 1916. | Proper Housing Means Cleanliness. An Address in the Conference of the Pennsylvania Housing and Town-Planning Association. |
| 80. | April, | 1916. | Pennsylvania and Her Municipalities. An Address before the State Association of Boroughs. |
| 81. | May, | 1916. | The Department of Health Laboratory, and what it has done for the Physicians of the State. Read before the Schuylkill County Medical Society. |
| 82. | June, | 1916. | Fifteen Little Talks on Health and Hygiene. |
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| 97. | Sept., | 1917. | Pennsylvania Health Legislation of 1917. |
| 98. | Oct., | 1917. | President's Address. Pennsylvania State Medical Society. |

NOTE:—Owing to the exhaustion of the supply, Bulletins of the above list bearing the numbers:—7, 9, 10, 33, 39, 49, are no longer available for distribution.

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HARRISBURG. PA.

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PUBLISHED MONTHLY BY
THE STATE DEPARTMENT OF HEALTH

SAMUEL G. DIXON, M. D., LL. D., So. D.
COMMISSIONER.

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1. THE SHORTAGE OF WHEAT.
 2. MILK AND BABIES.
 3. CONSERVATION OF EDUCATION.
 4. WATCH YOUR WASTE.
 5. THE DISEASES OF WAR.
 6. LEAD PIPE DANGERS.
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 8. PREVENTION OF DISEASE.
 9. WHAT IS FOOD ECONOMY.
 10. REGULAR HABITS.
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LITTLE TALKS ON HEALTH AND HYGIENE BY THE COMMISSIONER.

These little chats are designed to convey to the people of Pennsylvania homely facts which may assist in the promotion of the public health. The statement of simple truths which all may understand and simple rules of conduct for individuals, families and that larger group of persons making up the public has been kept in mind in this presentation.

THE SHORTAGE OF WHEAT.

The yield of wheat this year cannot possibly meet the demand from home and abroad. If we mean to divide our crust with our allies conservation must be observed.

Wheat bread is made either of whole wheat or the white starch of the wheat. In the economic scheme we must consider these two kinds of bread.

Whole wheat flour will sustain human life with its starch, bran, pollard and phosphate of lime, while we would starve to death on white bread made entirely of the starch, therefore those on a very restricted diet, such as prisoners, etc., are often dependent upon bread. They should have the flour containing the whole wheat,

White bread, however, when taken with soup made from a good stock that furnishes the nitrogen and earthy salts, is a cheaper food. It is also full of nutritive when combined with fat, meat and a little soup, the base of which is soup stock. Therefore white flour bread with a general diet is cheaper than whole wheat bread.

A further conservation of our present supply may be found by observing more moderation in the quantity of bread and biscuit eaten. Most people eat too much starch.

Those in charge of children seem to be under the impression that wheat bread made of white flour is the "staff of life." This is a mistake. When children have to depend largely upon white bread they are apt to be under-nourished, shown by their soft and flabby flesh. Under such a starchy diet they are susceptible to tuberculosis.

Too much bread made of white flour (starch) often produces a catarrhal condition of the mucous membrane.

Another economic way to help ourselves and our allies would be to increase the crop of food stuffs. As it is not the season for planting wheat, to make up the deficiency caused by the foreign demand, corn, a valuable food stuff for both man and beast, should be sown.

This would be the best substitute for wheat.

Maize or corn has a larger proportion of starch than wheat, and a little over one half more of nitrogen.

Corn is much richer in fat than is wheat.

Corn can be served in many palatable dishes. These are generally known or can be obtained from books on cooking.

Corn has a large geographical range in the United States and an average crop will do much to furnish food for our people.

Thousands of Belgians have lived almost entirely on corn for the last year.

Barley and oats are also substituted in a measure for wheat and can be planted to yield this season.

During the Revolutionary War maize was an important factor in feeding our soldiers.

MILK AND BABIES.

Milk is nature's complete food to sustain human and animal life.

Under ideal conditions this delicate food, that meets all the demands of the body, would never be exposed to the atmosphere, but pass directly from the mother to the offspring at the proper temperature and without the possibility of becoming dirty or infected with disease-producing germs.

Unfortunately the artificial methods of living adopted by man have made it impossible for us to be faithful to the laws of nature.

This week's chat will be confined to commercially handled cow's milk. Fresh milk or that which has been pasteurized may easily become unfit for use as a baby's food by the dust and dirt and disease germs introduced through its handling by man after it is taken from the cow.

The milk consumed in the State of Pennsylvania alone comes from at least 80,000 dairies of our own, besides the importation of daily train loads from our sister States.

In Pennsylvania we have no thorough inspection of the milk at any stage from the time the cow is milked until the fluid reaches the

babies. There is no law and no appropriation that gives any government officer power to guard properly our little children from dirty milk.

Some of our cities and other municipalities are doing all they can to take care of their milk supplies.

The State Department of Health feels helpless and asks for each mother or guardian of a child to help force a cleaner supply of milk.

Never buy milk from a seller who wears dirty clothes or whose hands and face are unclean.

See that his horse and wagon, truck, or any vehicle in which he carries his product are kept clean. If they are not, the milk is almost sure to be dirty.

The milkman should not fill his bottles en route. They should be filled only after being sterilized and before they are exposed to dust and dirt. Those who fill bottles as they deliver often take non-sterilized ones from one house and deliver milk in them to the next customer.

You should see whether or not the empty milk bottles collected are kept in his wagon separate from the full bottles.

Before opening the bottles the cap and top of bottle should be thoroughly washed, otherwise the milk flows out over the dirty lip of the bottle.

Look for dirt in the bottom of the bottle after it is permitted to stand.

CONSERVATION OF EDUCATION.

The physical and mental strength of a student is rarely considered by the educator. The result of this is that we have a vast number of nervous wrecks, a burden to themselves and to the public because they are too weak, either physically or mentally, or both, to stand what is placed upon them by the teachers. Many of them, if strong enough physically, have not been born with sufficient gray matter ever to apply the higher education with which it is sought to equip them, should they live through the ordeal.

Teaching does not produce brain substance, but only arms the brain with tools for the struggle of modern achievement. Not only are children forced by teachers beyond their natural aptitude, but frequently to death.

Along the tracks of education there should be many stations where children could be discharged, fitted to fill situations consistent with what nature had intended them to perform. To accomplish this in public school education, the curriculum would have to be adjusted so as to round up certain degrees of education essential for them to pursue successfully some of the lesser positions in life.

The present system of having a continuous chain of study from the primary school to the high school leaves no link that is complete within itself to provide for many of the occupations which are humble but still indispensable to our existence in civilized life.

Those sufficiently endowed with natural ability to make use of the higher education really represent a minority of our children. Those with weaker mentality, who are forced to keep up with those more richly endowed so that they may graduate from our high schools, are often rendered too proud to seek the more humble positions in life. Many of these who find themselves in that position become a burden to the public and often tumble into paths of dissipation.

This chat is not my first attempt during my life to awaken the educators to the necessity of recognizing the fact that nature has not made us all alike. This great variation is found in animate and inanimate life and is generally consistent with the versatility of the necessities of man.

The teaching world, however, seems to be too highly specialized to take a broad view of the subject. Since it has failed, parents will have to provide the solution themselves. Let them lay aside sentiment and try to measure their children's capacities for education and their aptitude to use education, so that they may be prepared by the proper kind of education to succeed in the character of work nature endowed them for.

This want of having more varied courses of study to meet the varied mental capacities of the students and their positions in life, has always been of vital importance. But in these war days wise conservation of education and health are doubly vital. If we are to lose some of our people in the war, one way of making up will be to educate more properly those remaining.

WATCH YOUR WASTE.

When will the American people who have lived in the land of plenty awaken to the fact that we are engaged in the most serious war this world has ever known?

We are just beginning the fight to keep our enemies away from heretofore peaceful homes.

The Allies, with whom we are fighting shoulder to shoulder, will depend upon us for food, and our army of producers must necessarily be lessened by those who go to the front to guard us from our enemy with their muskets as our forefathers did during the pioneer days of America.

To feed our men at the front and their allied friends we must not only talk about cutting down our sinful waste, but we must get down to "brass tacks" and use all the foods we buy with the money we earn in our various occupations, and many of us by the sweat of our brows.

It is high time we lay aside the frills and get down to real practical work. In times of distress wrought by the tremendous acts of nature, such as earthquakes, cyclones, etc., and also by the devastations and horrors of war, all social lines are broken down, and we are found in our shirt sleeves working side by side.

The State Department of Health of Pennsylvania has from its birth been talking health and economy to the people at our firesides through the newspapers, in the cities, on the farms, at the coal mines, in the forest, and to those who turn the wheels of all kinds of industries.

Today we have gone so far as to peep into the garbage buckets of the poor and the rich only to meet a surprise by finding good pieces of bread, potato, ginger snaps, mutton chops with large portions of good meat undisturbed, and potato skins thick enough to have furnished seed to the farmers, and these good foodstuffs represent only a very few of others equally valuable for food.

The saving of this waste will be an important factor in winning a victory that will mean the restoration of peace and happiness, while a continuance of waste will mean hunger to men who are fighting for the protection of our homes and the integrity of our peaceful land, and homes where we are gradually learning to bear and forbear with each other so that all differences of opinion will be settled by arbitration.

THE DISEASES OF WAR.

Tuberculosis has a hold on the people of France both of the army and the civic population.

While French bacteriologists have been conspicuous among the world's scientific investigators, the French health authorities have not followed up their preventive work by educating the people how to build up a resistance to the disease. This calamity to the French is a warning to us that holds not only in regard to tuberculosis, but other diseases that are spread nation-wide during wars.

Pennsylvania fortunately has a great State-wide system to fight tuberculosis and other diseases. During war times we must ask the closest cooperation of our citizens and others living in our midst.

In 1915 a bill was passed and approved by Governor Tener for the protection of the public health, providing that those conducting hotels, restaurants, dining-cars, or other public eating-places, shall not have in their employ as cooks, waiters, kitchen-help, chambermaids, or other house-servants, any person or persons suffering from trachoma, active tuberculosis of the lungs or skin, syphilis, gonorrhea, open external cancer, or barber's itch, or any who are carriers of typhoid fever.

This law further provides that no dishes, receptacles or utensils used in eating or drinking shall be furnished to patrons or customers of any public eating-place, unless the same have been thoroughly cleansed since their previous use by other individuals.

It also provides that towels be laundered or discarded after each individual use, and still further, that no common drinking-cup shall be furnished at any public drinking-place operated in connection with any such public eating-place.

The State Department of Health has a Division of Public Service to enforce this law, whose penalty is that violators shall, upon convic-

tion before any justice of the peace or alderman, be sentenced to pay a fine of not less than five dollars or more than one hundred dollars, or to be imprisoned in the county jail for a period of not more than 30 days, or both, in the discretion of the court.

The Commissioner of Health and his advisory council, knowing the horrors that have followed other wars, mean to enforce this law, so that the homes of our people may not be invaded by horrible diseases brought among us from all over the world.

There is no time to lose in preparing against the spread of disease. Our happiness and our national strength in our army, navy, on the farms, and in industrial plants, all depend upon our health. Without it victory cannot be ours.

LEAD PIPE DANGERS.

The durability and flexibility of lead pipe brought it into general use throughout civilized life years ago. In Pennsylvania it became quite generally used for conducting water as well as for plumbing in dwellings.

Notwithstanding the fact that much of it has been taken up from its trenches badly honeycombed by the chemical action of the sparkling spring water, and that this Department has done much to try and educate the people that water which has eaten into lead pipe is dangerous, we continue to find in service much pipe made of this material.

The price just now is almost prohibitive, yet the old pipes that are badly eaten should be replaced by metal that will not poison the water.

Block tin pipe is too expensive. Galvanized pipe can be used, but it is not altogether satisfactory because the hot water will take off more or less lead from the galvanized surface.

Black wrought iron heated and then rolled in asphaltum varnish, and stood on end so as to drain out the surplus coating, will make a very serviceable pipe that will resist the rust for many years without interfering with the potability of the water.

Copper pipes are too expensive during these war times to consider in any ordinary buildings, and while good, they might as well be dismissed from consideration.

Lead pipe plated with tin is also dangerous with some of our sparkling spring waters. The tin plating is often imperfect owing to bubbles and scratches on the inside of the pipe, and wherever the edge of the tin is exposed with the edge of the lead, electric action takes place and rapidly destroys the lead, which poisons the water.

When the spring and creek waters are active in their destruction of lead pipe and are used in long conduits to carry the water for domestic use, Bright's Disease is often produced.

These beautiful clear waters that are perfectly wholesome for domestic purposes will often become deadly poisonous if permitted to pass through lead pipes for a long distance.

PREVENT TYPHOID FEVER.

We must do our best to keep well. Before long our hospitals will be wanted for our soldiers.

Listen—and take a little advice. Don't be careless or foolhardy and bank on your being an exception to the rest of your associates and defy Nature, for she will not be defied.

Typhoid fever germs in a fertile medium will grow just as surely as grains of wheat in a fertile soil.

Nowadays Nature is in all her glory in the valleys and mountains of our beautiful country and it is the season when we are attracted from our winter homes to get close to Nature. Camping grounds are easily reached in these days of automobiles, motorcycles and other rapidly moving vehicles. There are thousands of beautiful sites to pitch our tents along the attractive-looking brooks. It is these attractive waters, which we find so soothing to the thirst after riding or driving long distances, that are deceptive to the layman. They are often clear and sparkling, yet loaded with miserable house drainage, carrying at times the deadly germs of typhoid fever.

This summer the waters will be more dangerous than usual because of the hurried arrangement of military camps, with the want of sanitary planning to protect our springs and streams.

Don't be deceived by the old-fashioned pump, the boiling springs and the clear water rippling over the pebbles in our little mountain streams, for Pennsylvania has now become thickly populated with people who are not yet sufficiently educated to protect the streams thoroughly against pollution.

When you are traveling by automobile or camping in strange locations never drink the waters without filtering or boiling. Try and carry pure water with you either in thermos bottles or stone jars. Most typhoid fever is contracted from drinking water. It is the great carrier and typhoid enters the system by drinking, by cleansing the teeth, by rinsing the face and mouth, or through raw vegetables that are washed in infected waters.

Swimming in polluted streams is known to be dangerous and children as well as adults have often lost their lives from taking typhoid fever in this way.

Be just as sure to carry pure water for drinking when touring or camping as to have good food.

The degree of care we take of our health this summer will be a measure of our loyalty to our nation.

PREVENTION OF DISEASE.

Before the causes of disease were known or the practical application of Nature's ways of producing immunity to disease, we had to suffer an attack of sickness and then trust to drugs and nursing for cure.

This was a difficult task and the death rate was sometimes enormous, both in times of peace as well as of war.

Then the day of prevention came. Gradually the laws of Nature were unfolded until today we know methods of preventing diseases and antidoting the poisons generated by germs in the body.

It was even as late as the Spanish-American War that we lost more soldiers from preventable diseases than we did from bullets. This was a disgraceful thing, as sanitarians could have prevented the high death rate. From what we can learn through the newspapers and other sources, France today is short of disinfectants in her trenches. We do not see any great public excitement over this condition, or any concerted action of our good citizens to give their mites to purchase and transport disinfectants for the French trenches so as to prevent disease.

Therapeutics or drug treatment seems to continue to have a hold on the lay mind, and possibly, to some extent, on the medical mind.

Both the people at home in every day life and the soldiers in our army are much to blame for the sickness that exists. The medical profession's advice is not taken when these persons are well, but the moment they get good and sick they call "oh, doctor, do relieve me from this awful pain" or "oh, doctor, save my life."

Perhaps this call comes too late. A few words of prevention from the doctor to the patient and those few words obeyed, might have prevented the sickness and saved suffering and sorrow.

As an example of the indifference of our people to advice given to keep them well, I will cite what happened in the Department of Health only a few years ago. The National Guard was to encamp at a certain place. The Department of Health surveyed all the water supplies. Where contamination was found we locked down some of the pump handles, or, where there were open springs, placed large signs upon them marked "dangerous." Yet to prevent soldiers from drinking this polluted water, the officer in charge had to detail pickets so they would not satisfy their thirst from these disease-producing waters.

Do not let us lose sight, individually or collectively, of preventing disease both at home and in our military camps, let them be where they may.

WHAT IS FOOD ECONOMY.

Hysteria of the individual is very catching, often becoming an epidemic. Community hysteria in a representative form of government destroys its efficiency. Hysterical people are apt to run to great excesses and neglect those things in life which are of the greatest importance, not only to the success of the individual but of the community. At present, we find individuals and whole communities hysterical on the economy of foodstuffs, even to the extreme of confining themselves to a maize (corn) diet instead of having a well-balanced diet with the variety of food that will not only stimulate the appetite and the digestive glands, but will meet Nature's demands.

Man is an omniverous being. We can best economize by eating what agrees with us. To resist tuberculosis and other wasting diseases and to keep in the best form for the working of our physical and mental body, particularly in these times of high nervous tension, we should have meat or some good vegetable protein as a substitute in moderation once a day.

In addition to this we want fat, preferably butter or cream or fats of animals, the latter only cooked sufficiently to heat them through. With the proteins and fats we want a carbohydrate (starch or sugar).

Today there are many diet lists being given to the public worked up into tables based upon their heat-producing power. The trouble with these diet receipts is that they are based upon tests made upon those having perfect digestion and a normal amount of physical exercise in a normal atmosphere.

Life is a factor scientific medicine cannot measure. It forbids the human body from being compared with an inorganic machine or test tube experiments in the laboratory.

The digestive tract and its many glands that vary in their powers to prepare food for the assimilation of the body, are governed by the nervous system. They vary greatly in their life power to produce digestive secretions. For the reasons given each individual after once realizing that meats, fat, starches and sugar are necessary in various proportions to maintain his health, will have to make an intensive study of what digests, so as to give him the best health and keep up his weight to give him energy, and permit him to sleep, and to be of good cheer.

You will always find that people differ from each other in their selection of foodstuffs, some doing well on a large proportion of vegetable food, others doing better on a reasonable amount of meat and carbohydrates or starch, while others have to avoid starches and sugar to prevent violent indigestion and ill health.

We often find powerful men who live on very little food, while many frail, illy-nourished people have good appetites and eat plenty. These things are hard to explain. The laws of Nature are so profound that even today in this scientific age we find the digestion of people differs so that we must at present attribute it to the variation of life force.

From our actual experience in life, after long devotion to the feeding of people, we have learned that a mixed diet is essential to good health. The practical experience of the individual must be a factor in guiding him in the selection of foods and the quantity he can eat.

REGULAR HABITS.

Regular habits for retiring must be considered as one of the best methods for securing good sleep.

The human body has a wonderful periodicity in all its spontaneous actions, and by studying these much of the machinery of health may be made to work smoothly

Witness one habit of waking at a certain hour to which we have been accustomed.

Regularity in eating is most important for health. The digestive tract will respond at regular times just as other habits will repeat themselves.

Proper food properly digested will do much for one's health and happiness.

It is a mistake to eat too much.

We should try and enjoy our meals by paying attention to the taste of food. Do not gulp it down. It should be masticated and tasted so as to stimulate those nerves which reflect their sense on the other nerves controlling the glands of digestion.

When you feel indigestion after eating a meal, note the ingredients eaten, and should it repeat itself, try to convict the guilty food and dismiss it from your dietary.

Don't make eating a task but make it a pleasure, so that the food will digest and be assimilated and applied to the different necessities of the activities of life.

Youth demands a greater variety and quantity of food than does old age, and especially does it require more protein and meat.

Learning what foodstuffs best suit is one of the great educational tasks man has before him, for he no longer has the intuition of the lower animals. The latter seem to inherit a sense that directs them what is best for their body wants. The vast majority of animals can differentiate between the poisonous and non-poisonous foodstuffs.

PENNSYLVANIA HEALTH BULLETINS.

1.	July	1900.	The Disease-Breeding Power of House-flies; Method of Prevention.
2.	Aug.,	1909.	Note on the Similarity of Barium Carbonate Poisoning and Rabies in Dogs.
3.	Sept.,	1909.	The Family Physician.
4.	Oct.,	1909.	Legal Rights and Tuberculosis. The Public Drinking Cup.
5.	Nov.,	1909.	The Germicidal Effect of Water from Coal Mines and Tannery Wheels upon Bacillus Typhosus, Bacillus Coli, and Bacillus Anthracis.
6.	Dec.	1909.	Report on the Effect of Repeated Injections of Products of the Tubercle Bacillus on Lymphatic Organs.
7.	Jan.,	1910.	Little Dangers to be Avoided in the Daily Fight Against Tuberculosis.
8.	Feb.,	1910.	The Object to be Attained by the Medical Inspection of School Children.
9.	March,	1910.	Conservation of Human Life in Pennsylvania. The Results of Four Years' Work of the Department.
10.	April,	1910.	The Biological Treatment of Tuberculosis as Conducted by the Department.
11.	May,	1910.	The Bubonic Plague, its Origin, Progress, and Means of Prevention.
12.	June,	1910.	A Retrospective Glance. 1. Susceptibility to Tuberculosis. 2. Purity of Milk. 3. Bovine Tuberculosis.
13.	July,	1910.	Experiments on Tubercle Bacilli, Old Tuberculin, and the Fluid of Dixon.
14.	Aug.,	1910.	The Conservation of Child Life in Pennsylvania.
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75.	Nov.,	1915.	An Address at the Laying of a Corner-Stone in Pittsburgh.
76.	Dec.,	1915.	On the Prevalence of Typhoid Fever in Philadelphia in the Autumn of 1915.

77.	Jan.,	1916.	The Pennsylvania Department of Health Exhibit at the Panama-Pacific International Exposition.
78.	Feb.,	1916.	The Sanitary Index. A Method of Measuring Public Health Work.
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80.	April,	1916.	Pennsylvania and Her Municipalities. An Address before the State Association of Boroughs.
81.	May,	1916.	The Department of Health Laboratory, and what it has done for the Physicians of the State. Read before the Schuylkill County Medical Society.
82.	June,	1916.	Fifteen Little Talks on Health and Hygiene.
83.	July,	1916.	Fifteen Little Talks on Health and Hygiene.
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98.	Oct.,	1917.	President's Address. Pennsylvania State Medical Society.
99.	Nov.,	1917.	Little Talks on Health and Hygiene.

NOTE:—Owing to the exhaustion of the supply, Bulletins of the above list bearing the numbers:—7, 9, 10, 33, 39, 49, are no longer available for distribution.

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Health Bulletin

No. 100

HARRISBURG, PA.

December, 1917

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PUBLISHED MONTHLY BY
THE STATE DEPARTMENT OF HEALTH
SAMUEL G. DIXON, M. D., LL. D., So. D.,
COMMISSIONER.

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1. TUBERCULOSIS AND PROPER NOURISHMENT.
 2. DANGERS OF MEDICINE.
 3. A CASE OF PATENT MEDICINES.
 4. FLIES AND COMMUNICABLE DISEASE.
 5. CLEANLY FOOD ESSENTIAL FOR HEALTH.
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 7. WATCH YOUR CHILDREN.
 8. GUARD YOUR CHILD'S SCHOOL LUNCH.
 9. TEETH AS A FACTOR IN GENERAL HEALTH.
 10. A PUBLIC DUTY IN WARTIME.
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LITTLE TALKS ON HEALTH AND HYGIENE BY THE COMMISSIONER.

These little chats are designed to convey to the people of Pennsylvania homely facts which may assist in the promotion of the public health. The statement of simple rules of conduct for individuals, families and that larger group of persons making up the public has been kept in mind in this presentation.

TUBERCULOSIS AND PROPER NOURISHMENT.

While tuberculosis is caused by a well-known germ, we often have a right to be suspicious of its coming from want of proper nourishment. This would seem to be a forerunner of the true disease of tuberculosis.

This want of nourishment is to be accounted for in several ways. The digestive system may be naturally weak, that is, born weak; it may have been strong in early life but abused by the use of alcohol, eating rapidly when physically or mentally tired or by gulping food without proper chewing or mastication.

A plunge bath just after eating will often arrest digestion. The drinking of ice water during a meal, or iced tea or coffee, will reduce the temperature of the stomach so that the natural process of digestion is interfered with. As a result the food is not properly prepared for the organs to absorb it. Therefore, it is not taken up by the blood stream as it travels through the system of arteries to build up the different tissues of the body.

The increase of tuberculosis of late in Belgium, in France, and other warring countries is largely due to the want of the things that Nature demands for building up healthy bodies. We must have some nitrogen in the form of meat or eggs or beans. We must have some fats. And we must have some starches. Otherwise the body will be partly starved and disease germs will thrive in the different tissues. This occurs more often in the lungs than anywhere else, but there is hardly an organ in the body that will not, under certain conditions, become tuberculous.

It is to be hoped that here in America where we have such a variety of climates and of soil we shall be able to keep up a general food supply and shall not be restricted in any of those things which Nature requires. They will reduce our power to produce foodstuffs, munitions of war, and all of those things that are essential for our living.

One great drawback in fighting the battle against tuberculosis is that it is not recognized early enough for us to combat it successfully. The State Health Department of Pennsylvania is examining about ten thousand people a day for this disease and finds many cases that are sent to our Dispensaries too late for us to guarantee a cure. Yet we may, even in some of those cases, arrest the disease and discharge a patient with enough good lung tissue left to enable him to lead a comfortable and useful life.

The recognition of tuberculosis requires a special medical training. Here in Pennsylvania we have tuberculous cases finding their way into Federal service through various paths. This is because we are confronted with a great necessity to form an army and navy in a short space of time and those responsible for this onerous work are unable to get special training in diagnosing this wide-spread disease.

We who are unable to go to the front because of being too young, or too old, or physically defective, will have to take the responsibility of keeping up the home conditions. We must see that foodstuffs are produced for all, not only at home but for the faithful and brave who have gone to the front to risk their lives for the continued freedom of America.

Those about to be drafted have a duty too. They must make it a rule never to try to deceive the Federal forces engaged in forming the army and navy. When they come before them for medical examination they must be absolutely honest. They must not tell part of the truth but the whole truth. Thus they will assist the examiners in their great, important and necessarily hurried scientific work.

DANGERS OF MEDICINE.

Drugs are not to be fooled with. Those capable of doing good are also capable of doing much harm.

An intelligent, experienced and conscientious physician will never prescribe drugs until he has made a thorough diagnosis, unless in a desperate, emergency case. It requires years of study to be able to determine the characters of diseases and distinguish one from another with certainty.

There are many sicknesses whose outward signs are so much alike that the lay person or one uneducated in medicine could not recognize a difference between them. For example, if one had a bad pain in the lower part of the body, in that region generally improperly called the stomach, one might consult a doctor over the 'phone or read a remedy in a newspaper or on the label of a quack medicine bottle, or else go to a druggist for help.

The one recommended under such circumstances might be supposed to have castor oil in it or some drug that would act as it does. The remedy is taken and the active movement of the stomach or, rather, intestinal tract, is produced. The patient grows much worse and the physician is then called.

The patient has been surprised that the pain has grown worse and the temperature has leaped up high even though a drug was taken. The doctor soon determines that his patient is dangerously ill, that the first pain was not an ordinary pain but due to an abscess from appendicitis. This abscess had been broken by the action caused by the medicine recommended and taken before the real nature of the sickness was recognized. The deadly pus from the abscess has been scattered through a large, complicated wormlike intestine, where it will lodge and kill the patient unless it is washed out, all of it, even down to a piece the size of a pin point.

The pus germs are so small that they cannot be seen with the naked eye, but they are born by the hundreds every minute.

A knife very often has a double edge and so have drugs. A headache powder will relieve the ache for the time being and at the same time weaken an already weak heart and in some cases cause death. It is only the medical profession that recognizes the great harm people do themselves by the indiscriminate use of drugs.

Those quack medicines and published books for home treatment, those advertisements of doctors who treat patients through correspondence, either by letter or newspaper; those druggists and nurses who prescribe on guess work all represent part of a great evil. The rash and dangerous habit of recommending drugs for a sick person when little or nothing is known about his real condition is a crime that should receive fitting punishment.

A CASE OF PATENT MEDICINES.

As a further warning against the incalculable amount of harm people do themselves by resorting to various drugs and patent medicines, which was mentioned last week, I would like to add from my personal experience a story typical of this practice. There are any number of similar ones I have come into contact with, and any physician could tell scores from his own experience.

This is the story of Henry, a colored waiter years ago in a well-known restaurant at the corner of Ninth and Chestnut Streets in Philadelphia. I stopped in there one day to get lunch and as soon as I sat down Henry approached me and informed me he was especially glad to see me that day. I asked him why.

"Well, doctor," he said, "Ah'se done got de consumption."

I asked him why he thought so.

"Got a powerful bad cough; can't eat; can't sleep; can't keep no flesh on me nohow."

"Is that so, Henry? When did you get this cold,"

" 'Bout two or three weeks ago."

"What are you doing for it?"

"A friend done tol' me to buy a bottle of Dr. Blank's Expectorant. Been takin' it steady ever since. Reckon Ah'd been cured by this time ef I hadn't been powerful sick."

Well, Henry didn't need to go any further after he had told me that. He admitted in answer to my questions that the more he had taken of the medicine the less he wanted to eat and the more "miserable" he felt. He said he thought that was on account of his "consumption."

I explained that it was the medicine and not the cold that was producing this effect. I told him the medicine had robbed him of appetite and the cold was taking advantage of the consequent lack of nourishment and run-down condition and ended by the prediction that if he didn't stop taking that Expectorant and let his stomach recover, so that he could enjoy again a good cup of coffee, a nice lean piece of beef or mutton, and perhaps some toast, he would actually get the disease he thought he had.

"Now, Henry," I said, "I'm sorry that I have to leave for Europe in the morning. But I want you to stop taking that medicine at once and go and get a good doctor and do exactly what he tells you. You'll soon be the same old Henry again. I don't believe you have consumption yet. Give Nature half a chance and she'll throw that cold off. The Expectorant has destroyed your digestion but as soon as that recovers you will be all right again."

About six months later I returned to Philadelphia and stopped into the restaurant to inquire after Henry. I found him fat, healthy, and his customary good-natured self. He greeted me smilingly.

"You was right, doctor," he said. "That medicine surely was killing me. Soon's Ah stopped it Ah done got hungry, Then Ah ate good victuals and got cured."

"Who was your doctor?"

"Well, Ah'll tell you how dat was. Ah jus' began to git well so fas' Ah didn't feel like Ah needed no doctor."

Perhaps that accidental meeting with Henry saved his life. Quack medicines kill a great many people. I don't think Henry ever took any more. I urged him to make good use of his lesson and to impress it upon anyone else he might hear of who was about to make his mistake.

Medicine is a great power. In the proper hands it is a power for great good. In the wrong hands it is a power for great evil. Medicine is in the wrong hands when some unrecognized disease is treated on the basis of the sick person trying something he has seen advertised, or what some friend recommends, or what some druggist thinks he ought to have.

When you are taken ill, you cannot tell how ill you are or what is the matter with you. Therefore it is foolish to think you can know how to cure yourself for the illness may be of a serious nature. Don't take drugs that are recommended by anyone but a doctor and don't take patent medicines. Go to a physician. He is the man best qualified to administer medicine.

FLIES AND COMMUNICABLE DISEASE.

This is the season when flies with their domestic habits begin to seek admission to the homes of man. This will be particularly noticeable as the fall rains come and the nights become cold. During the warm days they have been out in the open, living their customary life on refuse from man and beast, which makes them such dangerous insects in thickly populated communities.

Now, they want to get indoors more than ever. Hence it is the great danger season, when you must take all precautions we gave you in an early spring talk as to how to protect yourselves against flies. Look over all your screens to see that they are in perfect repair and try the various ways of exterminating flies that have gained entrance indoors.

The anatomy of the fly is interesting in the fact that its foot is formed to pick up a minimum of filth. This minimum, however, is large enough to be dangerous. When it lights on the ceiling the fly will secrete a substance that will enable it to hold on closely. When it lights on wet material these glands are inactive and there is very little attractive to the filth. As a result of this, when the first microscopical examinations were made there was some doubt thrown on the theory of there being danger of flies carrying disease germs. But nicer laboratory methods have demonstrated to us that notwithstanding Nature has modeled the fly's foot to protect the insect against carrying undue weight during its flight, it does carry the micro-organism of disease and should be guarded against with the greatest of care.

First, you must not forget the fact that flies seek filthy places from which to obtain their food.

Second, that they take advantage of the civilization of man to protect themselves against the weather, both in regard to dampness and temperature. It is for these last reasons that I venture to again refer to the fly during this most dangerous season.

It is a singular thing how flies will obtain entrance to homes that seem to be thoroughly screened. The only reason appears to be that they are ever following man, so that when he enters his home they enter with him. For those who can afford it, it would be well to have a screened vestibule where you can enter, close the outer screen door, and then look to see whether or not flies have gained admission with you, and if so, kill them before you enter the main door of your home.

CLEANLY FOOD ESSENTIAL FOR HEALTH.

Wild animals eat their food raw, either while fresh or after it has become tender with age. This latter habit is one of the weasel's. They kill quite liberally of their prey when the opportunity offers and then allow it almost to decay before they feed upon it. Primitive man hunted and devoured his food much like the lower animals.

Later in the history of man he learned to make fire and cook his food, and it is now quite evident from what we find in the Indian mounds that it became the custom, for instance, of the American Indians to have great clam bakes on the Atlantic Coast. Sometimes in these mounds we find bones of deer, showing that they had more than one kind of foodstuff.

As relics of a still later age, we find in the mounds various little implements that were evidently used for handling and serving the food.

This begins to approach conditions in the present state of civilization that we now find in the large centers of population. Thousands of people make their sole livelihood preparing food for the table and taking care of the dishes and the serving of the food, from the small boarding-houses to the enormous hotels.

In these places the health of those thus employed has not had any police supervision and yet we have known that communicable diseases have been on the rapid increase and horrible diseases have been passed from one person to another until they have become a great menace to the health, happiness and efficiency of our people.

The State of Pennsylvania, fortunately, in 1915 succeeded in passing a law that requires those in charge of restaurants, boarding-houses, hotels, etc., to look after the health of their people. The law handles it in this way, that it holds the proprietor of those places responsible for employing people who have these dangerous diseases that can be communicated to their customers through the foodstuff itself, or through the dishes, forks, knives, spoons, etc. Cooks and waiters cannot, under our new law, pursue their occupations without satisfying those they propose to serve that they are clean from these diseases the law is trying to prevent being thus spread. The moment this new law was signed by the Governor, a large number of waiters left their places in the Pullman coaches on the railroads and from the great railroad restaurants, as well as from the large and active hotels.

This became well known and the newspapers and journals endeavored to spread this news that the people might wake up to what had existed and what the new law proposed to protect them from. When the bill asking for this law was introduced in the General Assembly some of the great railroad companies that have large restaurants at their termini appreciated that it was a great sanitary measure and before the bill became a law they adopted its good points in the management of their great eating centers throughout the United States.

This law, like all other new laws that mean to bring about a great change in public policies, has to be sanely enforced, and the old system of preparing food and washing of dishes in hotels and restaurants must not be too suddenly destroyed. The time, fortunately, is here when the public has become educated and the people are demanding that the spirit of this good law be carried out. Some hotels advertise on their letterhead paper that the law is enforced in their establishments.

As the great cities grow the ways of living change. There become fewer private homes and more places where people live collectively and depend upon central places for eating. Therefore this law is becoming more and more important in regard to these centers, that they may not spread dangerous, yes, deadly disease through a community.

ECONOMY THROUGH CO-OPERATION.

We should look out for economy in the combination army made up of the fighters at the front and the men and women at home laboring to produce the essentials of war.

The American people are fighting a war of national defense against the government that has degenerated into a savagery such as was common before the era of higher civilization. Our fight is by a civilized people. Between our soldiers at the front and civilians at home there must be perfect unity. Those at home fully appreciate that the direct results of the war depend upon our trained men at the front, but at the same time they also know that the strength of the civil army at home must be developed so as to produce the maximum of munitions, food, and all necessary things.

This great army made up of its different parts must work in unselfish unity. We have had a lesson taught us by the British and French. Some of their most valuable men, men with natural ability, highly trained in specialties necessary for basic work, were permitted to go into the army at the front and be sacrificed at the cost of the strength of both the army at home and the army at the front.

One great factor in the success of any movement, great or small, is to get the right material into the right place. A bureau made up of officers of the fighting army and officers of the basic army to consider the proper placement of certain individuals would enable the facts on either side to be intelligently presented so that wise and economic decisions might be reached for the best interests of all concerned.

Facing the shortage of medical men in Pennsylvania and other states, even as it existed before the war, followed by a drastic war call, we are confronted by the difficult problem of looking after the health of those at home, the home army. This home army as well as the army at the front must, for humanitarian reasons and on the ground of efficiency, be well equipped.

It is to be hoped that our medical schools will be granted a corps of teachers and, under them, students, so that we may keep up the supply of medical men to care for the army at the front and at home.

Guarding against the abuse of exemptions of medical students is only a detail along the lines probably already adopted for the munition workers and others.

Co-operation of all the great divisions of the government, including both the military and the home army of producers, to bring about the strictest economy is bound to be one of the greatest factors in strengthening us in our present struggle. The home army must be kept in good health so as to produce a maximum of the essentials for war.

A more thorough medical examination in the beginning when the men are first called, would prevent much unnecessary demoralization in the home army conditions and at the same time avert much unnecessary expense and misplaced energy for the field army.

WATCH YOUR CHILDREN.

School days are here. For weeks our children have been scattered in their respective homes and in many cases living in the open air. Now the days are here when they begin to congregate together at the school houses and often under bad sanitary conditions.

This is the season that weighs heavily upon the conscientious Health Officer. Experience has taught him infallibly that the congregating of the sick and the well will again cause the annual increase of children's diseases. Increased deaths will occur in spite of all that can be done by the Health Department in conjunction with our educators to safeguard the health of our children.

This work to increase safeguards over the health and lives of our school children is only in its infancy. Until it is full grown we must appeal to the parents and guardians of the children to help us. We all love our children and would sacrifice our lives to save theirs, yet we do not make sufficient study of how to care for them.

The first thought in the morning should be the child. We should not content ourselves with greeting our sons and daughters with an impulsive and affectionate kiss and hug, and then rush to other duties that the day has brought with it. Instead, the first duty is to tarry with the child sufficiently long to determine whether or not it seems well. Without letting the child appreciate that there is a suspicion of its being sick, get to see the tongue, notice how it swallows, look for any spots or rash on the skin, for congested eyes, for a hot skin, for want of usual good cheer.

If the child shows any indication of sickness it should not be permitted to associate with the other children in the house, and under no circumstances should it be permitted to go to school. Its life is first, education second.

While it does not do to be pessimistic, it is better to consider any sign of illness the possible forerunner of some one of the diseases that children are so susceptible to.

For the child's sake it should be kept away from other children, as has been suggested, and unless the condition clears up in a very short time medical aid should be called in. A stitch in time saves nine. Such precautions as mentioned may not only save your own child's life but an epidemic of measles, scarlet fever, diphtheria or other communicable disease, not only in a school but maybe in a whole community. What is asked of mothers and guardians of children is so little and means so many human lives that certainly the warning is worth taking.

GUARD YOUR CHILD'S SCHOOL LUNCH.

Let us imagine that in the average household where the necessity of protecting children's health during school days is recognized, the mother has, as was described last week, begun her day with the children by assuring herself in the midst of the morning greetings that each child is apparently well, and it is therefore safe for her little flock to associate with each other and go to school to mingle with their mates without being a menace to the health of their comrades.

Now it is the duty of the mother or guardian to see that her child or children are clean both in body and clothing before starting for school. Food prepared at home must be provided for the lunch or the child directed what to eat or where to get it during the recess at school.

The luncheon should contain a little meat; then there should be some white bread, potatoes, or starch; and in addition a little fat, preferably good butter, or cream, or a little piece of toast with a teaspoonful of olive or white cottonseed oil.

The diet should be varied from time to time and should always contain some meat or beans, some starch and some fat; the latter, however, not fried or cooked until it is crisp. Overcooked fat will often produce an acid condition of the stomach which interferes with digestion.

If the child is to get lunch at some restaurant it must be instructed where to go and what to eat. If the lunch is made up at home it should be wrapped in clean new paper, or if that cannot be had, in a clean napkin.

The child should be carefully instructed not to place food with other children's or to buy candy, ice cream, cake, or any food from the street peddlers that are constantly hanging around many of our schools in the towns and villages to sell the children indigestible and often dirty or even, in fact, infected foodstuffs.

The child must be thoroughly impressed with the necessity of washing its hands before eating and never expose the food to flies.

Each child should be furnished with its own drinking-cup and instructed never to loan it under any circumstances.

The pencils and pen-holders should never be traded or loaned.

Let the mothers and teachers remember that health is first and education second. Education is of little use to the sick or the dead.

TEETH AS A FACTOR IN GENERAL HEALTH.

Good teeth are necessary for health. What adds more to the beauty of the human face than a mouth full of fine teeth?

The first teeth need great care. First, the mother should see that the mouth is not overcrowded so that its form may be maintained for the second teeth when they come.

The baby teeth are softer than those that come after and therefore acids must be scrupulously avoided, particularly in mouth washes, as they will destroy these important teeth which should be kept in the mouth as long as they are in good condition.

Your doctor or druggist should be able to tell you about the acidity of the tooth preparations that are on the market.

It is always a pleasure to learn how to do things for one's self; it makes you self-reliant and at the same time stimulates you to seek further knowledge.

If you suspect your tooth preparation of being acid you can buy a few cents worth of litmus paper from your druggist, and by dipping a very small piece of this into your mixture a reddish tinge will appear on the paper if there is any acid present. If acid, forbid the use of the preparation. If a tooth powder is used it should be well shaken up with water before making the acid test.

Plain chalk with a soft brush or rag will do very well to cleanse the teeth of children both night and morning. The mouth should be well rinsed with water after each meal, and just before retiring it is well for both adult and child to rinse the mouth with a strong solution of baking soda. This destroys the acidity that might have been generated in the mouth from foodstuffs.

The teeth and gums should not be abused. Sound and healthy gums are necessary to maintain the health of the teeth.

The teeth represent live parts of the body and must be guarded against abuse the same as we all better appreciate the eye has to be protected. I guess no one will doubt the life of a tooth when suffering from a bad toothache.

As the general health depends so much upon the health of the teeth and mouth we must all realize that the services of the doctor of dental surgery are as important or almost as important as the services of the doctor of medicine.

A PUBLIC DUTY IN WARTIME.

It would seem as though the general public ought to be fully informed on most of the horrors of war, judging by the amount that is printed on this subject. Nevertheless, there is apparently one phase that is not generally appreciated. I refer to the danger from communicable diseases acquired during the hardships of a soldier's life, especially if he happens to be taken prisoner and is thus exposed in confinement with hundreds of his mates. These diseases are carried from place to place wherever soldiers are transported, and often, when soldiers are invalided and sent home, they bring these communicable diseases with them to distribute among the civil population.

Already we have felt the lack of enough physicians to protect the health of the people at home, and the health officer is somewhat at a loss to know how to enforce his health measures.

The only solution of the problem is for the individual to give time and attention to taking care of himself. He must put himself in a receptive attitude toward the suggestions of the sanitary officer, even though he may think some of the suggestions so trifling as not to be worthy of serious consideration. There is one thing sure, and that is that he will consider it a serious matter if the disease warned against should happen to come his way.

If the writer were to think over some of the most trifling daily habits of everyone, and select the very humdrum subject of complaining about the habit many men have of drawing their trousers over their boots in undressing, instead of taking their boots off first, no doubt there would be readers who would take it as an instance of giving weight to trifles.

Yet they would be wrong. I am sure that one product of this habit is the common, yet always annoying and often dangerous boil, besides other infections that I cannot go into with the space available in these talks. A moment's thought will convince you that there is something in the theory. During a day's walking your boots have gone through miles of filth. When you slip your clothing off over them, you are taking the chance of transferring to your clothing, and thence to your body, whatever disease germs your boots may have picked up in this filth.

So these "trifles" are not always trifles. If we are going to do our duty in preserving the health of the civil population, we must have less cases of sickness than ever before, because we have decidedly less doctors at home to take care of whatever comes up. Later on, when wounded soldiers come home with unsuspected communicable diseases, we must know how to do the best thing for them and the best thing for ourselves, so that we may not have here, as they have had in foreign countries, wide-spread epidemics among the civil population to be a drain on the vitality of our military efforts.

PENNSYLVANIA HEALTH BULLETINS.

1. July, 1909. The Disease-Breeding Power of House-flies. Method of Prevention.
2. Aug., 1909. Note on the Similarity of Barium Carbonate Poisoning and Rabies in Dogs.
3. Sept., 1909. The Family Physician.
4. Oct., 1909. Legal Rights and Tuberculosis. The Public Drinking Cup.
5. Nov., 1909. The Germicidal Effect of Water from Coal Mines and Tannery Wheels upon Bacillus Typhosus, Bacillus Coli, and Bacillus Anthracis.
6. Dec., 1909. Report on the Effect of Repeated Injections of Products of the Tubercle Bacillus on Lymphatic Organs.
7. Jan., 1910. Little Dangers to be Avoided in the Daily Fight Against Tuberculosis.
8. Feb., 1910. The Object to be Attained by the Medical Inspection of School Children.
9. March, 1910. Conservation of Human Life in Pennsylvania. The Results of Four Years' Work of the Department.
10. April, 1910. The Biological Treatment of Tuberculosis as Conducted by the Department.
11. May, 1910. The Bubonic Plague. Its Origin, Progress, and Means of Prevention.
12. June, 1910. A Retrospective Glance. 1. Susceptibility to Tuberculosis. 2. Purity of Milk. 3. Bovine Tuberculosis.
13. July, 1910. Experiments on Tubercle Bacilli, Old Tuberculin, and the Fluid of Dixon.
14. Aug., 1910. The Conservation of Child Life in Pennsylvania.
15. Sept., 1910. Obedience to Natures' Laws the Primary Defence against Disease.
16. Oct., 1910. The Conservation of Infant Life in Pennsylvania.
17. Nov., 1910. Pennsylvania's Standing Army of Health.
18. Dec., 1910. Producers and Consumers. Pennsylvania's Tuberculosis Schools.
19. Jan., 1911. The Effect of Injections of Taurin upon Tumors of Mice and Dogs.
20. Feb., 1911. Some Duties, Ideals, and Opportunities of the Country Doctor.
21. March, 1911. Malaria: How it is Caused, and How to Get Rid of it.
22. April, 1911. Health.
23. May, 1911. The Common Fly. How it Develops. Why it must be Destroyed, and How to Destroy it.
24. June, 1911. Effects of Products of Tubercle Bacilli on Epithelium.
25. July, 1911. Five Years of Tuberculosis in Pennsylvania.
26. Aug., 1911. Organization of the Pennsylvania State Department of Health.
27. Sept., 1911. Tuberculosis, in the Country as well as in the City, a Disease of Bad Housing and Lack of Nourishing Food.
28. Oct., 1911. The Preparation of the Biological Products Distributed by the Pennsylvania Department of Health.
29. Nov., 1911. The Foundations of State Medicine.
30. Dec., 1911. Experiments Tending to show the Infrequency of the Occurrence of Tubercle Bacilli in the Urine of Patients Suffering from Pulmonary Tuberculosis.
31. Jan., 1912. The Baby the Most Important Problem in Modern Life.
32. Feb., 1913. Insects. The Common Forms in Relation to Public Health, and Methods for their Destruction.
33. March, 1912. The Opportunities for a Trained Nurse in Sanitary Service.
34. April, 1912. How to Organize a Baby-Saving Show.
35. May, 1912. Drowning.
36. June, 1912. The Health of Suburban Residences.
- 36½. July, 1912. Report of the Austin Disaster.
37. Aug., 1912. Getting Close to the People. Caring for the School Children.
38. Sept., 1912. Modern Medicine and the Physician.
39. Oct., 1912. Battling for Health at Mont Alto.
40. Nov., 1912. Tuberculin.
41. Dec., 1912. Conservation of Health. An Address.
42. Jan., 1913. Municipal Sanitation.
43. Feb., 1913. Tuberculosis and Our Schools.
44. March, 1913. The Relation of the Undertaker to the Public Health.
45. April, 1913. What State Control over Streams has done in Pennsylvania in Seven Years.
46. May, 1913. Troy Typhoid Fever Epidemic.
47. June, 1913. The Registration of Vital Statistics a Social Service.
48. July, 1913. Pennsylvania's Eugenic Marriage Law.
49. Aug., 1913. Pennsylvania's Health Legislation of 1913.
50. Sept., 1913. Health and Education. An Address.
51. Oct., 1913. Relation of Public Health to Industrial Welfare. An Address.
52. Nov., 1913. Bathing.
53. Dec., 1913. Results from the Injection of the Wax of the Tubercle Bacillus Indicating its Influence on Immunity and Susceptibility to the Tubercle Bacillus.
54. Jan., 1914. The Waters of Pennsylvania. An Address.
55. Feb., 1914. Reproduction and Race Betterment.
56. March, 1914. The State Tuberculosis Dispensary as a Social Service in Pennsylvania.
28. Rev. Apr. 1914. The Preparation of the Biological Products Distributed by the Pennsylvania Department of Health.
57. May, 1914. Insanitary Bath Tubs and Lavatories.
58. June, 1914. On Housing.
59. July, 1914. Medical and Sanitary Inspection of Schools of Fourth Class Districts in Pennsylvania.
60. Aug., 1914. Progress in Preventive Medicine in Pennsylvania since the Creation of a State Department of Health.
61. Sept., 1914. Certain Standards for Tuberculosis Dispensaries.
62. Oct., 1914. On the Upflow of Sanatorium Patients.
63. Nov., 1914. Effective Rural Sanitation. End Results.
64. Dec., 1914. Pennsylvania's System of Tuberculosis Dispensaries.
65. Jan., 1915. Present organization of the State Department of Health.
66. Feb., 1915. Notes on Typhoid Fever in Pennsylvania for the Past Nine Years.
67. March, 1915. Epidemic of Typhoid Fever in Skippackville and vicinity.
68. April, 1915. Diphtheria and Diphtheria Antitoxin.
69. May, 1915. Flies as a Factor in Infant Mortality.
70. June, 1915. Pennsylvania Health Legislation of 1915.
71. July, 1915. On the Medical Inspection of 469,000 School Children in Pennsylvania.
72. Aug., 1915. The Sanitary Engineer in Public Health Work.
73. Sept., 1915. Quarantine of the Home as Practised by the Department of Health.
74. Oct., 1915. An Address before the Pennsylvania Water Works Association.

75.	Nov.,	1915.	An Address at the Laying of a Corner-stone in Pittsburgh.
76.	Dec.,	1915.	On the Prevalence of Typhoid Fever in Philadelphia in the Autumn of 1915.
77.	Jan.,	1916.	The Pennsylvania Department of Health Exhibit at the Panama-Pacific International Exposition.
78.	Feb.,	1916.	The Sanitary Index. A Method of Measuring Public Health Work.
79.	March,	1916.	Proper Housing Means Cleanliness. An Address in the Conference of the Pennsylvania House and Town-Planning Association.
80.	April,	1916.	Pennsylvania and Her Municipalities. An Address before the State Association of Boroughs.
81.	May,	1916.	The Department of Health Laboratory, and what it has done for the Physicians of the State. Read before the Schuylkill County Medical Society.
82.	June,	1916.	Fifteen Little Talks on Health and Hygiene.
83.	July,	1916.	Fifteen Little Talks on Health and Hygiene.
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89.	Jan.,	1917.	Little Talks on Health and Hygiene.
90.	Feb.,	1917.	Little Talks on Health and Hygiene.
91.	March,	1917.	Little Talks on Health and Hygiene.
92.	April,	1917.	Little Talks on Health and Hygiene.
93.	May,	1917.	Insects.
94.	June,	1917.	Typhoid and Typhophors.
95.	July,	1917.	Infantile Paralysis.
96.	Aug.,	1917.	Administration in Typhoid Epidemics, as carried out by the Pennsylvania State Department of Health.
97.	Sept.,	1917.	Pennsylvania Health Legislation of 1917.
98.	Oct.,	1917.	President's Address. Pennsylvania State Medical Society.
99.	Nov.,	1917.	Little Talks on Health and Hygiene.
100.	Dec.,	1917.	Little Talks on Health and Hygiene.

NOTE:—Owing to the exhaustion of the supply, Bulletins of the above list bearing the numbers:—7, 9, 10, 33, 39, 49, are no longer available for distribution.



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THE STATE DEPARTMENT OF HEALTH
SAMUEL G. DIXON, M. D., LL. D., Sc. D.,
COMMISSIONER.

1. A CAUTION TO WAR KNITTERS.
2. OUR TOES ENDANGERED.
3. FEAST OR FAST.
4. FRESH AIR IN HOME AND HOSPITAL.
5. NEGLECTED VALUES IN FOOD ECONOMY.
6. CLEANSING THE TEMPLE OF THE BODY.
7. THE BANANA AS A FOOD.
8. THE VALUE OF PLAY.
9. WHEN CEREALS ARE INJURIOUS.
10. INDIVIDUAL RESPONSIBILITY IN WARTIME.

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LITTLE TALKS ON HEALTH AND HYGIENE BY THE COMMISSIONER.

These little chats are designed to convey to the people of Pennsylvania homely facts which may assist in the promotion of the public health. The statement of simple truths which all may understand and simple rules of conduct for individuals, families and that larger group of persons making up the public has been kept in mind in this presentation.

A CAUTION TO WAR KNITTERS.

The thousands of women and girls one sees nowadays working with their needles on socks and stockings for the soldiers are doing a patriotic and necessary service, but some of them are doing it wrong. The question of foot covering in extreme winter weather has always been a vexed one with our people. Most of them have seemed to think that if you wore socks or stockings of the heaviest weight wool obtainable, it naturally followed that you were making your feet as comfortable as they could be made in extreme weather. Many of our knitters have the same idea.

This is not so. If you clothe the feet with too heavy covering you are merely providing an overdressing which will cause perspiration. This perspiration will freeze in extreme temperatures and

will give the sensation of cold and discomfort. The wearer will then be tempted to add even more covering, which will aggravate the condition.

Those who have not been exposed to the severe weather of our northernmost climate will perhaps not be able to appreciate this thoroughly. I was a member of the Commodore Peary Committee on his first exploration in Arctic circles. Our idea of the right thing to do was to stock the Kite with plenty of heavy clothing. The result was that many of the men had frozen feet, and the cause was found to be what I have described above. The same thing occurred on our relief expedition, as its members, of course, had had no opportunity of learning the experience of the first party and profiting by it.

The conditions which our own soldiers and those of our allies will have to face next winter will be, judging by the history of the present war's previous winter campaigns, almost as taxing in many instances as those arctic parties have to face. Therefore we must consider carefully what is best for them.

I do not mean to say that socks and stockings and other clothing must not be heavy enough to provide the indispensable warmth, but I believe a word of caution is necessary to those who believe that piling on weight of material is all that is required.

The lesson is just as important for those of us who are at home. Experience has demonstrated that the dressing of the feet and limbs requires the nicest adjustment which will provide warmth but not induce perspiration.

OUR TOES ENDANGERED.

The present extremely high heels worn by the majority of American women, both old and young, mean deformity of the feet.

X-ray pictures indicating the relation of the toes to the ground when they are encased in these high-heeled shoes, show that women are walking on the ends of their five toes. There is food for thought in the fact that the horse nowadays walks on a foot consisting of one toe, while in the more primitive animal there were three or five toes.

The shape of the natural foot of man has a great variety of uses and it is one of the things that has helped to place him first in the life of the earth. The natural foot has been one of the anatomical facts that has helped him to his present high state of efficiency. The

form of that foot has enabled him to become a good hunter, a good farmer, a good sailor, a good soldier—in fact, anything he has found it necessary through the ages to become, or finds now essential for the war we are fighting to continue our personal liberty.

Let the butterfly girls and the other high-heeled old and young women stop and realize the value of the normal foot of man. Let them cut off the high heel and substitute the natural level. This might also work out to the interest of direct economy by using the surplus heel to make thicker soles on the shoes, which would be very sensible and practical for the climate we have in Pennsylvania.

Let us recognize the models of Nature which have lead us to success. If man's foot had been abused for an indefinite time in a way to have reduced it to a one-toed foot, resembling the horse's, he would have a hard time trying to fulfill his present duties in life.

The high heel represents the fashion for the women of today and means a great discounting of the value of mankind, particularly if it is continued a long time. The present high heel is not only tortuous, but of great injury to the health. The mother must remember that she is partly responsible for the feet of her children and that if she wants them to have normal, strong feet she must keep them naturally shod.

FEAST OR FAST.

In civilized life men find it impossible to pay proper attention to their meals. They cannot eat regularly and have no time to eat slowly, and they apparently will not eat what they have learned by precept and experience is fitting for those who do work indoors that requires intense mental application. Failing to follow the laws of health over a period of time, they begin to feel inert mentally and physically; their work becomes a burden; eyesight loses its acuteness, while the natural white of the eye is lost and it becomes congested, showing sometimes a yellow tinge; the appetite begins to fail; natural sleep is broken up and interrupted, and when awakening comes, the mind is puzzled by confused ideas.

When these symptoms are recognized, men of experience know it is because the food taken has been in excess of the demands of the body.

Such a man was a laboratory associate of mine years ago. Occasionally he would salute me in the morning and say, "What do you prescribe, doctor, a feast or a fast?" He meant that he felt he had

been neglecting all outdoor exercise for a long time and had not at all neglected taking heavy and frequent meals, until now his system was out of balance and something had to be done to restore balance. Query—should he fast himself back to health, or should he emulate the old Romans and start with a feast?

Most people are familiar with the ancient Roman feast, whose features we would describe nowadays more accurately with the name of orgy or debauch. These feasts always made them sick and the physical reaction would be such that no food was taken into the system for some time afterward. So that the same result of a fast was arrived at by a different route. My associate, being a man of humorous viewpoint, was just accenting this condition.

When I asked him why he thought of the more roundabout way of the Romans, he replied that you got some hilarity with it. "You get more out of treating yourself by debauch, than drugs," he said, and that is the way a good many people look at it unfortunately.

The Roman custom is recognized historically as having continued long afterward in other races, and perhaps it is still surviving today, in principle at least, among individuals here and there.

Still, the mass of our people have a more sensible view. It is known that a fast will relieve nature while she is coping with the task of overcoming extra burdens that have been laid upon the system. The debauch, which is generally what high livers make of their "feast," on the contrary is seen generally as something that overloads the system and adds to nature's burden, even though it mentally stimulates the subject, sometimes to the point where he might be guilty of crime. And there is the hilarity—a thing to be remembered and tempt the subject to try the same remedy the next time.

The alcohol that goes with over-indulgent living makes an over-demand for water upon the tissues and gradually changes their physical condition and interferes with their physiological action. The result is that permanent harm is done. Each time an excess of alcohol is indulged in there is left a permanent imprint upon the digestive system that will never be erased. Each time this imprint will become deeper until the subject is indelibly marked as an alcoholic. Fortunately we all know the effects of alcohol today and avoid it, excepting in its proper place and then use it only in moderation.

FRESH AIR IN HOME AND HOSPITAL.

Fresh air is the environment in which man developed to his present state of perfection. Now that our great newspapers reach to

every nook and corner of the world, bearing the message, most men and women appreciate the part pure air plays in sustaining health.

Owing to the various demands of civilization we find it hard to be where we can best earn a livelihood and at the same time dwell in an atmosphere sufficiently pure to maintain perfect health. Not only the medical profession, but now the general public, appreciates that in the cure of tuberculosis of the lungs fresh air is essential, and, therefore, all our best hospitals are built and managed so that the patients may receive the maximum of fresh air.

Purity of air is necessary for the sick. This is often lost sight of by patients and those to whose care they are entrusted. During the convalescence of patients from acute diseases in cold weather, we find in homes and hospitals where there are the greatest luxuries that those in attendance on the sick often neglect maintaining the regulation temperature. The patient does not get his fresh air unless it happens to be summer. Physicians, internes and nurses, who have to be up and down at all times of the day and night, and often thoughtless of those whom they serve and often fail to dress themselves sufficiently for protection against the cold air the patient in bed should receive if those in charge are to get the best results. They should measure the temperature of the room by a thermometer and not by their own feelings. This is an important fact to be remembered by both patient and caretakers.

NEGLECTED VALUES IN FOOD ECONOMY.

In the United States there is always a waste of foodstuffs. This continues in time of war, but it changes in character. Some food that is valuable in time of peace becomes worthless in time of war because labor to harvest it is scarce.

There are other foods which are of little value in time of peace because of the cost of labor to harvest them by the ordinary methods, men preferring to devote their time to something more immediately productive. Some of these take on a value in time of war because of their peculiar character and wide distribution and because they can be harvested without the labor of man.

Take for example the grasses scattered over vast areas of our country that grow sparsely and are harvested by the simple process of being eaten by animals.

Imagine a poor family composed of mother and children, left without male support on account of the war and living in a suburban or country district on the wildest and most poorly fertilized land, valueless in time of peace. Food economy for this family is to give it a cow or other ruminant animal that could directly consume these wild grasses and allied vegetable matter, vast quantities of which are widely scattered in our country, over mountains, valleys, plains, and rocky volcanic formation that can only be traversed by some of the lower animals.

These animals will substitute for the labor of man, travel in these almost impossible places and eat or harvest these little bunches of grass until a day's "labor" will enable them to carry to the little domestic center a liberal quantity of milk, one of the most valuable foodstuffs known to man for everyday uses and priceless in the days of sickness, when most other foods fail.

This sort of waste land is treated with such indifference in time of peace that in time of war it is not thought of, but now our people should consider the suggestion and try to take advantage of it.

What has been brought out may be taken advantage of in all climates of the United States where vegetation grows throughout the year. It may even be extended into colder climates where a certain amount of labor by men is necessary to prepare food in the summer to carry the cattle through the winter.

Besides the cow, which has been taken as an example, we may add geese. They will feed on the same character of food and take care of themselves until they grow into large fowls, weighing five to six pounds apiece. Their flesh represents a delicious and valuable food, prepared with little or no human labor involved.

To these animals can be added many others, such as ducks, goats, sheep, etc. They, too, like the cow, can feed themselves on natural vegetation which is of such poor quality that it is generally looked upon as worthless.

If this proposition were worked out and understood, the principle could be adapted to a broad field that would mean much to the comfort and health of our people, as well as add strength to the national defense.

CLEANSING THE TEMPLE OF THE BODY.

The indifference of mankind to his body has always been beyond my comprehension. His value as an individual unit among his kind depends upon the condition of the living organic machinery within

his body. This represents Nature's greatest effort. It is upon the perfection of this machinery that our nation will have to depend to succeed in the horrible war we have been plunged into to preserve our national liberty.

Man should be taught from childhood to be proud of his body. He should be taught early in life that it is the home of his brain and very soul. He should be taught how complicated it is and what great care is necessary to keep it in order, and that every time it is out of order it falls below its normal standard of accomplishment.

The care of the body means the care of its outward parts, like the limbs, and of its internal organs, particularly those of digestion.

Notwithstanding the fact that the body is the most valuable property mankind possesses, there is nothing toward which the majority of men display more indifference. There seems to be a general idea that the body is indestructible. That is why we see so many poor, miserable specimens of mankind within our midst. If they realized what objects of pity they really are, every effort would be made to "spruce up" and present the best possible appearance to their fellow creatures.

I have heard people say of others: "They are too proud to care for appearances." Yet these same people would be apt to share our common feeling of being proud of the appearance of our homes, or our mechanical machinery, or of our animals, particularly our horses.

Many a man allows his children to grow up without proper care or attention for their bodies, the temple of all they have, while his driving-horse is kept in a state of perfection so that it may not only be admired, but also perform its duties to the highest degree.

A pet driving-horse has its body kept clean, its bed and living conditions most carefully looked after, and its food prepared with the greatest care. If on one day it does not get as much physical exercise as on another, the food is reduced so that its physical condition may be maintained. If it gets over-warm while traveling, it is at once covered with a blanket to prevent taking cold.

Let us give thought to what we are doing and see that our bodies and those of our children are at least as well taken care of as those of our animals, and that we value them as highly as our other possessions. Let us at once learn to be proud of our bodies and realize the fact that they are complicated and require the greatest care to keep them in order.

Just now our nation demands that each individual be of the greatest value that we may win this war upon which our liberty depends.

THE BANANA AS A FOOD.

The banana is a tropical fruit. In its natural state it grows in great abundance and the cost is comparatively little in labor to sustain the trees. Its flavor is generally liked by man. It is nourishing as it contains one and three-tenths per cent. proteins, six-tenths per cent. fats, and twenty-two per cent. carbohydrates, with a full value of four hundred and forty-seven calories per pound.

In Rio de Janeiro, South America, the forests of these tall dignified trees present an attractive sight. The leaves are not as beautiful as those of the hard-wood trees of our colder climates which shed their foliage in the fall of the year and sleep until the warm sun starts the sap circulating, somewhat as the blood circulates through man's vascular system. Foliage of tropical vegetation that is exposed the entire year around to winds, hot suns, etc., is thereby faded and damaged until it is not comparable to our fresh spring growths.

In the tropics the fruit is left on the banana tree until thoroughly ripe, and the natives are particular to cook it before eating, as it is otherwise hard to digest. But in order to allow of shipping, it is picked green. Then it is sent all over the civilized world to a people who, even to this day, do not know how to handle it.

The beautiful yellow fruit is attractive and therefore is placed on our tables to be eaten raw. This is often injurious, as it causes indigestion. The fruit, when fit to eat, has many black spots on the skin and sometimes, even, the whole skin becomes black. This indicates that it has ripened. Even in this state, however, it is not as easily digestible as when cooked.

The small dealers purchase the fruit green and, to hasten the ripening of some to sell at once so as to get their money back quickly, resort to different methods. One is to put it in their beds so that the heat of the body will make it marketable sooner. This is a dirty, dangerous habit. Once we had a typhoid fever epidemic at Lynn, Mass., as a result of this custom. One of the occupants of the bed had the fever. Always treat the skin as a dirty, infected part of the banana, which should be washed or destroyed.

Our children are often made sick by eating the raw fruit and are not infrequently poisoned by the dirt they get off the skins. The banana, however, intelligently handled, is of vital importance to our economy and should be eaten even more generally than it is in these times of conservation of food values.

THE VALUE OF PLAY

Most people would say that play's first requisite was that it should consist of something one doesn't have to do. Play is in reality, however, of all sorts and descriptions. Those that produce something useful besides giving rest are greatly to be preferred. There are many sorts equally stimulating to the mind and to the body and productive of valuable results.

One essential to beneficial play is that it be wholesome and be performed in a healthful environment, that is, where we have pure moving air of the right temperature and preferably sunlight.

The body should be maintained in such position as to permit an even circulation of the blood and normal respiration. The object of the exercise would otherwise be very much discounted. The air carries food to the blood which it furnishes to the tissues, and the blood in turn takes away the debris and returns it to the outside atmosphere. This will make plain to any reader the necessity of what has been said about the proper environment in which to exercise.

Unless the blood is supplied with what nature has provided for her normal function, the digestive system will fail and the body will be wanting in nourishment. When this condition takes place man becomes susceptible to the disease germs that are ever present in the atmosphere. The greatest safety is to be found in keeping up the resistance. It is much easier to battle against the germ organisms before they get established in the system. Once they establish themselves in the tissues they generate poisons which interfere with the normal working of the body and enable them to nourish themselves and increase, often at an alarming rate. In fact some of them reproduce themselves to the extent of thousands, yes hundreds of thousands in a minute of time.

Variation of types of work properly adjusted will often substitute for what is generally known as play. For instance, one's brain center may become weary at a monotonous occupation, and a decided change of occupation, notwithstanding it be what we usually call work, will permit the first brain center involved to rest while another works.

But we come back to the fact that what most people regard as play is an occupation that they are not required to perform, and, it would seem from a psychological standpoint, to give greater rest if it be an occupation that is particularly useless from the standpoint of producing economic results.

Therefore there should be time set aside in the work of the day, no matter whether it be varied or not, when the environment may be changed and play should be taken up.

I speak of games in a broad sense. For instance, after sitting at a task a given number of hours, a walk in the open air, the body held erect and the limbs swinging so as to produce circulation, and attention given to surroundings so that the mind may be occupied and contented, constitutes one of the best kinds of play, preferably performed in company.

In these times it is well to remember the simple saying of the old days that all work and no play makes Jack a dull boy.

WHEN CEREALS ARE INJURIOUS

Cereals are valuable as foodstuffs for human needs, particularly during youth and old age.

We will use in this talk oatmeal as an example of starchy foods and through it, study their effect on the system. In the first place it should be thoroughly chewed so that the alkaline secretions of the glands in the mouth are thoroughly mixed with it. If this is done, the process of digestion which turns the starch into sugar is well started before the food passes from the mouth into the stomach, where it meets with an acid secretion intended for the digestion of proteins or meats. Here the starch digestion, if it has been started, is arrested.

There are two ways of preparing or cooking these foodstuffs, oatmeal among them. The Scotch cook it a very short time, their idea being to retain a certain degree of hardness of the grain that may act mechanically and stimulate the nerves of the muscular walls of the intestines and thereby take the place of laxatives that are too often used by those leading sedentary lives. This half-cooked mass of food is often mixed with milk or cream, which helps to wash it down immediately upon taking it into the mouth, which entirely prevents the natural digestion.

When taken in this way, oatmeal or other starchy food is wasted as far as nourishing the body is concerned and often acts as a foreign substance in the digestive tract, thereby interfering with general digestion of other foods. This not only prevents the body getting nourishment from a general diet but it produces toxins or poisons

which are absorbed by the body and cause various ills, all the way from a slight disturbance of health to such an extreme that sometimes will cost a life.

The better and most practical way to cook oats or other starchy foods is to submit them to cooking for hours, often all night, that the grain be thoroughly softened, which makes it more easily digested. This softer preparation of the food, however, is also often eaten with milk or cream, reducing its consistency to a semi-liquid which goes down the throat almost immediately after entering the mouth. It therefore is subject to the same criticism as the less thoroughly cooked oatmeal as far as the alkaline digestion in the mouth is concerned. This, however, is not irritating to the digestive system and would seem to go through a certain degree of digestion in the intestinal tract. Nevertheless, it is robbed of a great deal of its food value.

The oats and other starchy foods, as we have said, should be thoroughly cooked and kept in the mouth sufficiently long for the first process of digestion to take place.

Going back, then, to our thoroughly cooked oatmeal, we may say that the wisest way to prepare starchy food is to make it into cakes or some other form that will necessitate chewing before it can be swallowed. If, however, owing to the conditions we meet in life, we are compelled to take a food in mush form, it is advisable to select that which is thoroughly cooked and sufficiently dry to hold its own form. This form should not be destroyed by adding large quantities of milk or cream. The food should enter the mouth in solid form so that more or less mastication will be required. When this is followed out oatmeal becomes a valuable food, and many persons who have had to give up the eating of starches, can, if they follow this advice, resume their consumption with impunity and often be much benefited. This is true especially, as has been said, in youth and old age.

INDIVIDUAL RESPONSIBILITY IN WARTIME.

The demand for men to serve in the army is fast making serious inroads upon the forces engaged as producers of food, fabricators of munitions of war and guardians of the sick. Our Indian corn is standing uncut in the fields while other foodstuffs are rotting in the ground for the want of human hands to work them. The prospects

are that the home army which produces those things necessary to support our boys at the front, is going to be still further reduced in number.

This condition of things makes it obligatory for each individual to take care of his own health as well as to be his "brother's keeper."

Today, the point of our talk will be on a custom of the retail druggist and of those who have contagious and infectious diseases at their homes. Take as an example what may very well be a typical illustration in the case of a child suffering from scarlet fever. The doctor leaves his prescription, which is sent to the retail druggist to be prepared. The medicine is sent home and given to the patient. There being signs of improvement, the doctor orders the prescription renewed.

The bottle that has been kept in the patient's room is sent to the druggist, who is busy putting up a prescription for another child who only has a bad stomach-ache. The druggist takes the bottle from the scarlet fever patient in his hands, but, being in a hurry to get the prescription off to the patient suffering from stomach-ache, sets the bottle down and puts up the powders with his infected fingers.

One of these powders is given to the patient directly out of the paper from the druggist, with a result that in a few days she has a slight sore throat, etc. The doctor is sent for, and informs the anxious mother that he very much suspects scarlet fever.

The bottles, boxes or jars in which prescriptions are put up, should never be returned to the druggist from a house where there is a contagious or infectious disease. These communicable diseases have to be quarantined to prevent them from becoming epidemic.

Thus in the case mentioned above, the illness of the second child would probably make necessary the isolation of some wage-earner in its family, man or woman, and thus cause the economic loss of one who contributed not only to the support of those at home but also to the upkeep of the soldier boys at the front.

Let us take care to keep well, that we may produce our share of the winning of the war fought to free the peoples of the world.

PENNSYLVANIA HEALTH BULLETINS.

1.	July,	1909.	The Disease-Breeding Power of House-flies; Method of Prevention.
2.	Aug.,	1909.	Note on the Similarity of Barium Carbonate Poisoning and Rabies in Dogs.
3.	Sept.,	1909.	The Family Physician.
4.	Oct.,	1909.	Legal Rights and Tuberculosis. The Public Drinking Cup.
5.	Nov.,	1909.	The Germicidal Effect of Water from Coal Mines and Tannery Wheels upon Bacillus Typhosus, Bacillus Coli, and Bacillus Anthracis.
6.	Dec.,	1909.	Report on the Effect of Repeated Injections of Products of the Tubercle Bacillus on Lymphatic Organs.
7.	Jan.,	1910.	Little Dangers to be Avoided in the Daily Fight Against Tuberculosis.
8.	Feb.,	1910.	The Object to be Attained by the Medical Inspection of School Children.
9.	March,	1910.	Conservation of Human Life in Pennsylvania. The Results of Four Years' Work of the Department.
10.	April,	1910.	The Biological Treatment of Tuberculosis as Conducted by the Department.
11.	May,	1910.	The Bubonic Plague, its Origin, Progress, and Means of Prevention.
12.	June,	1910.	A Retrospective Glance. 1. Susceptibility to Tuberculosis. 2. Purity of Milk. 3. Bovine Tuberculosis.
13.	July,	1910.	Experiments on Tubercle Bacilli, Old Tuberculin, and the Fluid of Dixon.
14.	Aug.,	1910.	The Conservation of Child Life in Pennsylvania.
15.	Sept.,	1910.	Obedience to Nature's Laws the Primary Defence against Disease.
16.	Oct.,	1910.	The Conservation of Infant Life in Pennsylvania.
17.	Nov.,	1910.	Pennsylvania's Standing Army of Health.
18.	Dec.,	1910.	Producers and Consumers. Pennsylvania's Tuberculosis Schools.
19.	Jan.,	1911.	The Effect of Injections of Taurin upon Tumors of Mice and Dogs.
20.	Feb.,	1911.	Some Duties, Ideals, and Opportunities of the Country Doctor.
21.	March,	1911.	Malaria: How it is Caused, and How to Get Rid of it.
22.	April,	1911.	Health.
23.	May,	1911.	The Common Fly. How it Develops. Why it must be Destroyed, and How to Destroy it.
24.	June,	1911.	Effects of Products of Tubercle Bacilli on Epithelium.
25.	July,	1911.	Five Years of Tuberculosis in Pennsylvania.
26.	Aug.,	1911.	Organization of the Pennsylvania State Department of Health.
27.	Sept.,	1911.	Tuberculosis, in the Country as well as in the City, a Disease of Bad Housing and Lack of Nourishing Food.
28.	Oct.,	1911.	The Preparation of the Biological Products Distributed by the Pennsylvania Department of Health.
29.	Nov.,	1911.	The Foundations of State Medicine.
30.	Dec.,	1911.	Experiments Tending to show the Infrequency of the Occurrence of Tubercle Bacilli in the Urine of Patients Suffering from Pulmonary Tuberculosis.
31.	Jan.,	1912.	The Baby the Most Important Problem in Modern Life.
32.	Feb.,	1912.	Insects. The Common Forms in Relation to Public Health, and Methods for their Destruction.
33.	March,	1912.	The Opportunities for the Trained Nurse in Sanitary Service.
34.	April,	1912.	How to Organize a Baby-Saving Show.
35.	May,	1912.	Drowning.
36.	June,	1912.	The Health of Suburban Residences.
36½.	July,	1912.	Report of the Austin Disaster.
37.	Aug.,	1912.	Getting Close to the People. Caring for the School Children.
38.	Sept.,	1912.	Modern Medicine and the Physician.
39.	Oct.,	1912.	Battling for Health at Mont Alto.
40.	Nov.,	1912.	Tuberculin.
41.	Dec.,	1912.	Conservation of Health. An address.
42.	Jan.,	1913.	Municipal Sanitation.
43.	Feb.,	1913.	Tuberculosis and Our Schools.
44.	March,	1913.	The Relation of the Undertaker to the Public Health.
45.	April,	1913.	What State Control over Streams has done in Pennsylvania in seven years.
46.	May,	1913.	Troy Typhoid Fever Epidemic.
47.	June,	1913.	The Registration of Vital Statistics a Social Service.
48.	July,	1913.	Pennsylvania's Eugenic Marriage Law.
49.	Aug.,	1913.	Pennsylvania Health Legislation of 1913.
50.	Sept.,	1913.	Health and Education. An address.
51.	Oct.,	1913.	Relation of Public Health to Industrial Welfare. An address.
52.	Nov.,	1913.	Bathing.
53.	Dec.,	1913.	Results from the Injection of the Wax of the Tubercle Bacillus Indicating its Influence on Immunity and Susceptibility to the Tubercle Bacillus.
54.	Jan.,	1914.	The Waters of Pennsylvania. An address.
55.	Feb.,	1914.	Reproduction and Race Betterment.
56.	March,	1914.	The State Tuberculosis Dispensary as a Social Service in Pennsylvania.
28.	Rev. April,	1914.	The Preparation of the Biological Products Distributed by the Pennsylvania Department of Health.
57.	May,	1914.	Insanitary Bath Tubs and Lavatories.
58.	June,	1914.	On Housing.
59.	July,	1914.	Medical and Sanitary Inspection of Schools of Fourth Class Districts in Pennsylvania.
60.	Aug.,	1914.	Progress in Preventive Medicine in Pennsylvania since the Creation of a State Department of Health.
61.	Sept.,	1914.	Certain Standards for Tuberculosis Dispensaries.
62.	Oct.,	1914.	On the Upfollow of Sanatorium Patients.
63.	Nov.,	1914.	Effective Rural Sanitation. End Results.
64.	Dec.,	1914.	Pennsylvania's System of Tuberculosis Dispensaries.
65.	Jan.,	1915.	Present Organization of the State Department of Health.
66.	Feb.,	1915.	Notes on Typhoid Fever in Pennsylvania for the Past Nine Years.
67.	March,	1915.	Epidemic of Typhoid Fever in Skippackville and Vicinity.
68.	April,	1915.	Diphtheria and Diphtheria Antitoxin.
69.	May,	1915.	Flies as a Factor in Infant Mortality.
70.	June,	1915.	Pennsylvania Health Legislation of 1915.
71.	July,	1915.	On the Medical Inspection of 469,000 School Children in Pennsylvania.
72.	Aug.,	1915.	The Sanitary Engineer in Public Health Work.
73.	Sept.,	1915.	Quarantine of the Home as Practised by the Department of Health.
74.	Oct.,	1915.	An Address before the Pennsylvania Water Works Association.
75.	Nov.,	1915.	An Address at the Laying of a Corner-Stone in Pittsburgh.
76.	Dec.,	1915.	On the Prevalence of Typhoid Fever in Philadelphia in the Autumn of 1915.

77.	Jan.,	1916.	The Pennsylvania Department of Health Exhibit at the Panama-Pacific International Exposition.
78.	Feb.,	1916.	The Sanitary Index. A Method of Measuring Public Health Work.
79.	March,	1916.	Proper Housing Means Cleanliness. An Address in the Conference of the Pennsylvania Housing and Town-Planning Association.
80.	April,	1916.	Pennsylvania and Her Municipalities. An address before the State Association of Boroughs.
81.	May,	1916.	The Department of Health Laboratory, and what it has done for the Physicians of the State. Read before the Schuylkill County Medical Society.
82.	June,	1916.	Fifteen Little Talks on Health and Hygiene.
83.	July,	1916.	Fifteen Little Talks on Health and Hygiene.
84.	Aug.,	1916.	Fifteen Little Talks on Health and Hygiene.
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89.	Jan.,	1917.	Little Talks on Health and Hygiene.
90.	Feb.,	1917.	Little Talks on Health and Hygiene.
91.	March,	1917.	Little Talks on Health and Hygiene.
92.	April,	1917.	Little Talks on Health and Hygiene.
93.	May,	1917.	Insects.
94.	June,	1917.	Typhoid and Typhophors.
95.	July,	1917.	Infantile Paralysis.
96.	Aug.,	1917.	Administration in Typhoid Epidemics, as carried out by the Pennsylvania State Department of Health.
97.	Sept.,	1917.	Pennsylvania Health Legislation of 1917.
98.	Oct.,	1917.	President's Address. Pennsylvania State Medical Society.
99.	Nov.,	1917.	Little Talks on Health and Hygiene.
100.	Dec.,	1917.	Little Talks on Health and Hygiene.
101.	Jan.,	1918.	Little Talks on Health and Hygiene.

Note:—Owing to the exhaustion of the supply, Bulletins of the above list bearing the numbers:—7, 9, 10, 33, 39, 49, are no longer available for distribution.

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HARRISBURG, PA.

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THE STATE DEPARTMENT OF HEALTH

SAMUEL G. DIXON, M. D., LL. D., Sc. D.,
COMMISSIONER.

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 2. HEAT AND HEALTH DURING WAR.
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 10. SOAP.
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LITTLE TALKS ON HEALTH AND HYGIENE BY THE COM- MISSIONER.

These little chats are designed to convey to the people of Pennsylvania homely facts which may assist in the promotion of the public health. The statement of simple truths which all may understand and simple rules of conduct for individuals, families and that larger group of persons making up the public has been kept in mind in this presentation.

A VIEWPOINT TOWARD FOOD ADMINISTRATION.

Most of our foodstuffs are made up of different constituents. A potato is largely composed of starch, whereas beefsteak is largely composed of nitrogen or protein. Starch represents so many heat-producing units, and beefsteak likewise produces its own quota.

This is so when you consider the matter from a laboratory standpoint, but if you made a test of the same values by feeding these foods to human beings, you would find the values varied greatly because of the variations of the human or organic machinery which handled them. Starch, for instance, in the cases of some individuals, passes through the digestive system without the body assimilating it and obtaining the addition of its heat units. In the cases of other individuals, the same thing would happen with beefsteak.

For this reason we must remember, when advising foodstuff for a community, that what is one man's meat is another man's poison. Thus it behooves those who have the power to regulate foodstuffs for a community to be liberal enough in drawing up their lists to meet the demands of the capabilities of the digestive system of the different individuals. In other words, one capable of making a rational selection must have a thorough knowledge of the physiology of foodstuffs.

The people of the State of Pennsylvania eat too much potato. The large proportion of starch in the composition of this vegetable produces a catarrhal condition of the digestive tract, which interferes with digestion and leaves the patient insufficiently nourished, eventually over a long series of years producing starvation.

Meat, as a rule, is also over-eaten by Pennsylvanians. Just now, however, during the tension of war we need more meat than usual.

It should also be kept in mind that meat will be more easily produced during the war than will vegetables, for our trouble will be the want of male help to carry out the continuous demands occasioned by the cultivation of vegetables during all stages from planting to gathering, whereas cattle can in great measure take care of themselves and what human help is required need not be of the highest development, either physical or mental.

HEAT AND HEALTH DURING WAR.

Heat is the first essential to life. The young of man or of the lower animals cannot in their first days in the world make from their food heat enough to sustain life, and the small nestling animals require the heat of their parents.

The cry of freezing to death for want of fuel has gone up and the responsibility been put up to government officials, railroads, etc. We have heard, however, very little about the individual responsibility of the great economical scheme before us in the time of war.

The ash pile of the poor and rich, on being exposed to a good shower of rain, assumes an almost black surface. A large proportion of it is carbon and rich in heat-producing units. The forests, near and far away, are full of good fire-wood. Near large centers of civilization we see in the fields or commons lots of wood, boxes, rubbish of various kinds, and we find in the cellars nearby expensive anthracite coal.

Many foreigners put us to shame by collecting these waste products that can be used for fuel and to-day many of them are rich in heat-producing material to see them through the winter.

Some time ago, visiting one of the large State hospitals and with a full realization of the responsibility of having thousands of patients unable to take care of themselves, I found the heat question looming up. To guard against the threatened shortage in fuel we doubled up our grates so that we could have those on which we could burn wood, soft coal or anthracite coal. This increased our chances of being able to guard against having these poor people suffer from cold during any emergency that might arise.

Before leaving there I could hear the echo of the woodman's axe felling trees that would never be of any account except for kindling wood. This wood was being stored, and as opportunity came, with the teams going to and from various points, we filled our empty wagons and hauled the wood to the heating and power plants of the institution. Therefore, today, those State institutions feel fairly comfortable as to the prospects of getting through the balance of this cold season.

Where there is a will there is usually a way, but our people do not seem to appreciate their individual responsibility. It is a pity our people do not realize that wood and coal or those combustible things that will produce heat are worth more to us today than gold dollars. I feel sure that if the heaps of ashes mentioned were covered with gold dollars there would be almost bloodshed in the scramble to collect them, but those gold dollars will not give you warmth in the very cold weather or cook food, which is essential to life. It therefore becomes obvious to anyone who will read or think that the coal in these ash piles and the wood in fields, forests or on the commons, are more valuable under the present circumstances than gold itself.

Let everyone turn his thoughts to his own individual responsibilities and see to detect any waste of combustibles and conserve them with more energy than he would conserve the almighty dollar. No ashes should leave the home that have not been screened and picked. No wooden boxes or other things that are made of combustible material should be burned or wasted in the commons, but should be stored with the greatest of care for a day that may meet you when life depends upon heat.

ENEMIES IN THE HOME.

The modern method of preparing drugs for family use has its attractions, yet it has been the cause of many deaths, often from the

fact that so many drugs are put up in form and color to resemble each other. One may be innocent and the other deadly poison, as for instance, calomel, an innocent form of mercury, and bichloride of mercury, one of the most deadly of poisons.

One of these drugs might be picked up for the other in the dark or even in the day time, if the label was not carefully read by the one seeking to take the medicine. This has resulted in an innocent father killing his child or perhaps his wife, or in some cases, himself.

Another great mistake is to change a drug from one bottle to another without altering the label. It is often done in dividing up the contents of a rare drug with a neighbor. The one receiving the unlabeled bottle depends upon his memory, which often fails him and a fatal mistake results.

A very short time ago I knew of a generous doctor dividing up a rare drug he had with one of his colleagues, intending to label the bottle he kept for himself. He neglected to do so and not long after he wanted to use the drug and picked up what he believed to be the proper bottle, but which proved to contain an agent active in its powers to destroy tissue. This he dropped into his eye and only escaped having his eye destroyed by a narrow margin.

Now this is quite a common mistake and people have been made blind by this carelessness. Drugs that are most useful are, as a rule, most dangerous, and should always be kept under lock and key and plainly labeled. At present we are being robbed enough of the members of our families during the war so that we should have no patience with the killing of the innocent at home by simple carelessness, and it is this common everyday practice of confusing drug bottles that I warn you against. It can all be done away with if you will only give it reasonable attention.

WAR DANGERS.

During a great international war, such as we are in at present, we are prevented from taking ordinary precautions to guard against the transmission of disease. Notwithstanding the great interchange of men from all parts of the world we have more communicable diseases in our midst than ever before. This behooves the individual to look out for himself, otherwise he is apt to fall a victim to one of the miserable diseases which are being carried by men from all parts of the world.

In some of these places from which we are importing labor, chronic and disabling diseases are very common. For example, trachoma and ulceration of the mucous membrane of the eye which is easily transferred from one to another, which terminates in blindness. It was only a short time ago that our Government had to return a lot of laborers who came from one of the most infected trachoma centers in the world. Many of these men had gone to restaurants for their meals. Their fingers were infected from rubbing their ulcerated eyes and from these fingers they imparted this disease, trachoma, to the forks, spoons and knives and frequently to the cups and plates, often deeply fissured with cracks where the ordinary washing in cheap restaurants is not sufficient to disturb the germs which produce the disease.

Every individual, therefore, eating at a public restaurant should enter a protest against cracked cups and plates that this one source of danger might be eliminated.

THE FAMILY MARKET BASKET.

On a Saturday morning a poor woman, with her baby in arms, was returning from the town to her home in the suburbs with a well-filled market basket.

In the electric train were two extravagantly dressed gentlemen sitting together, across the aisle from the woman and child. One was evidently suffering with a bad cold, a serious infection, which the extremely changeable weather had made very prevalent. This sick individual was ignorant of sanitary laws, as well as police laws, for he was spitting the poisonous contents of the cough on the floor of the car. Directly, the two well-dressed individuals left the train at a way-station and the woman, being somewhat crowded with baby and basket in the seat, divided with another passenger, moved to the place made vacant by the two men.

She carelessly placed her basket on the floor in such a manner that it took up a portion of the poisonous sputum. The rest of the story is easily told.

The basket was carried home and placed on the kitchen table where the food to be eaten raw would be prepared for the family. The sickness of the baby in arms, and maybe other members of the family, can be left to the imagination.

To keep well, our foodstuffs must be kept clean.

THE LOSS TO OUR MILITARY FORCES BECAUSE OF ALCOHOL.

Getting the great number of men together from various parts of the country to military camps is a most difficult duty. The violent change of climate and the exchange, in many cases, to outdoor life from indoor life, without proper clothing and under unusual living accommodations, as well as the influx of new men, without isolation camps where they might be kept under observation until any contagious disease as had time to develop, are sources of danger to the men who are already in the service. Unfortunately, the recruits, under the excitement of the new life, are tempted to indulge in high living and alcohol, which condition is always bad, particularly in cases of pneumonia. Alcohol combusts in the human system and does so at the expense of other valuable foodstuffs, and therefore, should not be considered a foodstuff under the circumstances. It interferes with treatment, using the patients' strength, when this strength is most needed in resisting the disease.

Overeating and drinking are bound to increase the death rate from pneumonia. It is the duty of each one to take good care of his health so as to enable him to fight against this serious, exhaustive disease prevalent in Winter.

During the last several months, not only in military but in civil life, we have lost by death a large number of citizens by pneumonia and other diseases, where the patients' condition was due to the fact that they were overfed and over-alcoholized.

It is to be hoped that this word of warning will, particularly at this time when this terrible world's war calls for our best efforts, help us to restrain ourselves, and that our citizens in civil life will join in assisting the military authorities in carrying out their discipline, by refraining from furnishing alcohol to those who are in the service.

WINTER COLDS.

During the frigid weather, you want to keep well nourished. To do this, your meals should be taken with regularity, and you should take a moderate amount of exercise, not too near meal-time. No better form of exercise can be found than that of walking with a good

brisk step and swinging of the arms. You should keep up a good circulation of blood that the digestive fluids, and the food be prepared for and assimilated by the body.

No excesses should be indulged in, particularly the taking of alcoholic beverages. You should live in pure air night and day, but the very young and the very old should not be exposed to extremely low temperatures.

Careful observance of these suggestions will do much to prevent, and at least to some extent, help pull you through congestive or even infective colds, which are prevalent when the weather is so very changeable as it is in winter in our North Atlantic climate.

"WAR BREAD."

Facing the great economics that must be practiced in the time of war and in the future as the population increases and the natural productions of the earth become depleted, it will be necessary for us to adjust what we have in the way of essentials, especially is this so of foodstuffs.

It therefore becomes important to know what combinations can be made and the relative food value of such combinations with our standard foodstuffs. One of Philadelphia's able chemists has given me a bread combination, which he has worked up with his wife's co-operation.

They use corn flour, which heretofore has been almost unknown in our domestic bakeries, and it would seem to open the way for a very large saving of our wheat flour. It must be distinctly understood first that there is a great difference between corn flour and corn meal. The corn flour in composition is practically the same as the corn meal, but it contains a little more protein and starch, and a little less moisture and fat, the shortage of fat being due to the fact that the germ is extracted before grinding. It must be further understood that you cannot replace all of the wheat flour with corn flour, as the corn contains no gluten, which is the constituent in wheat flour that makes it possible to obtain a raised dough.

However, bread and rolls made with twenty per cent. of corn flour have little or no corn taste, and this is the percentage, which has been found after long experiments, to produce the best bread. The same proportion can be used also for griddle cakes, pastry and cakes.

To make bread as it is made in the average household, where a sponge is set and no accurate measure of the flour is made, the better plan is to mix a quantity of the two flours, keep it on hand, and use the mixture instead of wheat flour. For a twenty per cent. mixture, take one quart of corn flour and four quarts of wheat flour, mix thoroughly, preferably by putting through a flour sifter three or four times. Of course, larger quantities may be mixed at one time, keeping the proper proportion. In pastry even larger proportions of the corn flour may be used. In making bread, pastry, etc., use this mixture in exactly the same proportions and treat it exactly as you would ordinary flour.

In nutritive value, the difference between the mixed-flour bread and the all-wheat-flour bread is very slight. Their food value is practically the same, and if white corn flour is used, the bread has the same appearance as the all-wheat bread.

This bread has a decided advantage for every day consumption over most of the war breads made of whole wheat, oat flakes, bran, etc., by being free of the roughage, and consequently it is not irritating when used meal after meal and day after day and one would not be apt to tire of eating it every day.

Corn flour can be obtained from grocers, or they can get it for you as it is regularly on the market and is being made by a number of milling companies and in cost should be cheaper than wheat flour. It should be ground as fine, or nearly as fine, as the wheat flour which you are in the habit of using.

This bread makes a twenty per cent. saving of the wheat with no practical loss in food value and without any of the objectionable features of the coarser meals.

SPRING TYPHOID.

The news of the loss of our transport reminds us of the way in which we are to be robbed of our young people during this war and should awaken us, who remain at home, to the necessity of guarding our lives and protecting ourselves against disasters no less dangerous. From now on, Typhoid must be carefully watched as an enemy.

Old Winter has stored the filth of the season on our hillsides and along the banks of our streams. With the melting of the snow and ice in the Spring, all of this filth will be washed into the streams and carried to our water works. This will test the filter plants to their

capacities, many of which have too small a margin to care for an excessive flow of filth. Breakdowns will occur and the people must be prepared to protect themselves by boiling water for domestic purposes upon the first indication of trouble with their local water supplies.

In view of the above, the question ought to arise in the people's minds, with all the money that is being spent in the beautifying of our cities, whether or not it would not be wiser to use this money for the enlarging and improving of the purification plants so that our waters may be safe, and wait a little longer for our boulevards and parkways. We certainly must use all known ways, and where possible, devise new ones, to protect the health of the young population and to conserve what we now have from unnecessary destruction.

SOAP.

In this season and at this time when thousands of our young troops are being mobilized for the National Army and are, of necessity, exposed to unusual conditions often producing nervous chills, is the wise time to economize on soap. Again, when the cost of living is so high all along the line, it will be an economy to use less soap as it is a much abused article. It is not necessary, as so many seem to think, to have a stiff, creamy lather in order to dissolve the dirt that is filling up the pores of the skin. On the contrary, very little soap—pure soap—is required to break up the dirt and permit the water to remove it from the pores so that the glands may perform their normal duty.

The pores are the openings on the surface of the skin of the sweat glands and must be kept clear and free from either dirt, soap or any matter that would tend to interfere with their action in the elimination of perspiration. Imperfect action of the sweat glands is a source of disease, various matters accumulating in the system, which would otherwise be eliminated.

Therefore, economy in soap would not only be a saving in money but would help in saving human life, by cutting down respiratory diseases.

PENNSYLVANIA HEALTH BULLETINS.

1.	July	1909.	The Disease-Breeding Power of House-flies; Method of Prevention.
2.	Aug.,	1909.	Note on the Similarity of Barium Carbonate Poisoning and Rabies in Dogs.
3.	Sept.,	1909.	The Family Physician.
4.	Oct.,	1909.	Legal Rights and Tuberculosis. The Public Drinking Cup.
5.	Nov.,	1909.	The Germicidal Effect of Water from Coal Mines and Tannery Wheels upon Bacillus Typhosus, Bacillus Coli, and Bacillus Anthracis.
6.	Dec.	1909.	Report on the Effect of Repeated Injections of Products of the Tubercle Bacillus on Lymphatic Organs.
7.	Jan.,	1910.	Little Dangers to be Avoided in the Daily Fight Against Tuberculosis.
8.	Feb.,	1910.	The Object to be Attained by the Medical Inspection of School Children.
9.	March,	1910.	Conservation of Human Life in Pennsylvania. The Results of Four Years' Work of the Department.
10.	April,	1910.	The Biological Treatment of Tuberculosis as Conducted by the Department.
11.	May,	1910.	The Bubonic Plague, its Origin, Progress, and Means of Prevention.
12.	June,	1910.	A Retrospective Glance. 1. Susceptibility to Tuberculosis. 2. Purity of Milk. 3. Bovine Tuberculosis.
13.	July,	1910.	Experiments on Tubercle Bacilli, Old Tuberculin, and the Fluid of Dixon.
14.	Aug.,	1910.	The Conservation of Child Life in Pennsylvania.
15.	Sept.,	1910.	Obedience to Nature's Laws the Primary Defence against Disease.
16.	Oct.,	1910.	The Conservation of Infant Life in Pennsylvania.
17.	Nov.,	1910.	Pennsylvania's Standing Army of Health.
18.	Dec.,	1910.	Producers and Consumers. Pennsylvania's Tuberculosis Schools.
19.	Jan.,	1911.	The Effect of Injections of Taurin upon Tumors of Mice and Dogs.
20.	Feb.,	1911.	Some Duties, Ideals, and Opportunities of the Country Doctor.
21.	March,	1911.	Malaria: How it is Caused, and How to Get Rid of it.
22.	April,	1911.	Health.
23.	May,	1911.	The Common Fly. How it Develops. Why it must be Destroyed, and How to Destroy it.
24.	June,	1911.	Effects of Products of Tubercle Bacilli on Epithelium.
25.	July,	1911.	Five Years of Tuberculosis in Pennsylvania.
26.	Aug.,	1911.	Organization of the Pennsylvania State Department of Health.
27.	Sept.,	1911.	Tuberculosis, in the Country as well as in the City, a Disease of Bad Housing and Lack of Nourishing Food.
28.	Oct.,	1911.	The Preparation of the Biological Products Distributed by the Pennsylvania Department of Health.
29.	Nov.,	1911.	The Foundations of State Medicine.
30.	Dec.,	1911.	Experiments Tending to show the Infrequency of the Occurrence of Tubercle Bacilli in the Urine of Patients Suffering from Pulmonary Tuberculosis.
31.	Jan.,	1912.	The Baby the Most Important Problem in Modern Life.
32.	Feb.,	1912.	Insects. The Common Forms in Relation to Public Health, and Methods for their Destruction.
33.	March,	1912.	The Opportunities for the Trained Nurse in Sanitary Service.
34.	April,	1912.	How to Organize a Baby-Saving Show.
35.	May,	1912.	Drowning.
36.	June,	1912.	The Health of Suburban Residences.
36½.	July,	1912.	Report of the Austin Disaster.
37.	Aug.,	1912.	Getting Close to the People. Caring for the School Children.
38.	Sept.,	1912.	Modern Medicine and the Physician.
39.	Oct.,	1912.	Battling for Health at Mont Alto.
40.	Nov.,	1912.	Tuberculin.
41.	Dec.,	1912.	Conservation of Health. An Address.
42.	Jan.,	1913.	Municipal Sanitation.
43.	Feb.,	1913.	Tuberculosis and Our Schools.
44.	March,	1913.	The Relation of the Undertaker to the Public Health.
45.	April,	1913.	What State Control over Streams has done in Pennsylvania in seven years.
46.	May,	1913.	Troy Typhoid Fever Epidemic.
47.	June,	1913.	The Registration of Vital Statistics a Social Service.
48.	July,	1913.	Pennsylvania's Eugenic Marriage Law.
49.	Aug.,	1913.	Pennsylvania Health Legislation of 1913.
50.	Sept.,	1913.	Health and Education. An Address.
51.	Oct.,	1913.	Relation of Public Health to Industrial Welfare. An Address.
52.	Nov.,	1913.	Bathing.
53.	Dec.,	1913.	Results from the Injection of the Wax of the Tubercle Bacillus Indicating its Influence on Immunity and Susceptibility to the Tubercle Bacillus.
54.	Jan.,	1914.	The Waters of Pennsylvania. An Address.
55.	Feb.,	1914.	Reproduction and Race Betterment.
56.	March,	1914.	The State Tuberculosis Dispensary as a Social Service in Pennsylvania.
28.	Rev. April,	1914.	The Preparation of the Biological Products Distributed by the Pennsylvania Department of Health.
57.	May,	1914.	Insanitary Bath Tubs and Lavatories.
58.	June,	1914.	On Housing.
59.	July,	1914.	Medical and Sanitary Inspection of Schools of Fourth Class Districts in Pennsylvania.
60.	Aug.,	1914.	Progress in Preventive Medicine in Pennsylvania since the Creation of a State Department of Health.
61.	Sept.,	1914.	Certain Standards for Tuberculosis Dispensaries.
62.	Oct.,	1914.	On the Upfollow of Sanatorium Patients.
63.	Nov.,	1914.	Effective Rural Sanitation. End Results.
64.	Dec.,	1914.	Pennsylvania's System of Tuberculosis Dispensaries.
65.	Jan.,	1915.	Present Organization of the State Department of Health.
66.	Feb.,	1915.	Notes on Typhoid Fever in Pennsylvania for the Past Nine Years.
67.	March,	1915.	Epidemic of Typhoid Fever in Skippackville and Vicinity.
68.	April,	1915.	Diphtheria and Diphtheria Antitoxin.
69.	May,	1915.	Flies as a Factor in Infant Mortality.
70.	June,	1915.	Pennsylvania Health Legislation of 1915.
71.	July,	1915.	On the Medical Inspection of 469,000 School Children in Pennsylvania.
72.	Aug.,	1915.	The Sanitary Engineer in Public Health Work.
73.	Sept.,	1915.	Quarantine of the Home as Practised by the Department of Health.
74.	Oct.,	1915.	An Address before the Pennsylvania Water Works Association.
75.	Nov.,	1915.	An Address at the Laying of a Corner-Stone in Pittsburgh.
76.	Dec.,	1915.	On the Prevalence of Typhoid Fever in Philadelphia in the Autumn of 1915

77.	Jan.,	1916.	The Pennsylvania Department of Health Exhibit at the Panama-Pacific International Exposition.
78.	Feb.,	1916.	The Sanitary Index. A Method of Measuring Public Health Work.
79.	March,	1916.	Proper Housing Means Cleanliness. An Address in the Conference of the Pennsylvania Housing and Town-Planning Association.
80.	April,	1916.	Pennsylvania and Her Municipalities. An Address before the State Association of Boroughs.
81.	May,	1916.	The Department of Health Laboratory, and what it has done for the Physicians of the State. Read before the Schuylkill County Medical Society.
82.	June,	1916.	Fifteen Little Talks on Health and Hygiene.
83.	July,	1916.	Fifteen Little Talks on Health and Hygiene.
84.	Aug.,	1916.	Fifteen Little Talks on Health and Hygiene.
85.	Sept.,	1916.	Fifteen Little Talks on Health and Hygiene.
86.	Oct.,	1916.	Fifteen Little Talks on Health and Hygiene.
87.	Nov.,	1916.	Fifteen Little Talks on Health and Hygiene.
88.	Dec.,	1916.	Fifteen Little Talks on Health and Hygiene.
89.	Jan.,	1917.	Little Talks on Health and Hygiene.
90.	Feb.,	1917.	Little Talks on Health and Hygiene.
91.	March,	1917.	Little Talks on Health and Hygiene.
92.	April,	1917.	Little Talks on Health and Hygiene.
93.	May,	1917.	Insects.
94.	June,	1917.	Typhoid and Typhophora.
95.	July,	1917.	Infantile Paralysis.
96.	Aug.,	1917.	Administration in Typhoid Epidemics, as carried out by the Pennsylvania State Department of Health.
97.	Sept.,	1917.	Pennsylvania Health Legislation of 1917.
98.	Oct.,	1917.	President's Address. Pennsylvania State Medical Society.
99.	Nov.,	1917.	Little Talks on Health and Hygiene.
100.	Dec.,	1917.	Little Talks on Health and Hygiene.
101.	Jan.,	1918.	Little Talks on Health and Hygiene.
102.	Feb.,	1918.	Little Talks on Health and Hygiene.

NOTE:—Owing to the exhaustion of the supply, Bulletins of the above list bearing the numbers:—7, 9, 10, 38, 39, 49, are no longer available for distribution.



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PENNSYLVANIA Health Bulletin

No. 103

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1920

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PENNSYLVANIA

HEALTH

LEGISLATION OF 1919

HARRISBURG, PA.:
J. L. L. KUHN, PRINTER TO THE COMMONWEALTH
1920.

Pennsylvania Health Legislation of 1919



PENNSYLVANIA HEALTH LEGISLATION OF 1919.

Only such Acts of the Legislature of 1919 as directly affect the Department of Health, its officers and agents are here reproduced. A number of other laws affecting the Public Health more or less directly were enacted and may be found appropriately indexed in the Pamphlet Laws of this State. Most of these enactments will be published in special bulletins by the Departments charged with their enforcement.

Legislative enactments concerning alcohol, its manufacture, sale, branding, etc., are not reproduced in this pamphlet.

Besides the laws and amendments to laws here reprinted, acts were passed governing the following matters: (Nos. 146 and 147) the testing of milk for butter fats; (Nos. 143 and 356) branding of eggs and the denaturing of decayed eggs; (Nos. 91 and 194) modifying the qualifications for registration as a pharmacist; (No. 172) authorizing third-class cities to appropriate funds and contract for the collection of garbage, ashes, waste and refuse; (No. 173) authorizing the Bureau of Medical Licensure to grant licenses to practice medicine and surgery to certain soldiers and sailors under certain conditions; (No. 264) changing the personnel of the Nurses Registration Board; (No. 164) requiring the provision of toilet-rooms and water-closets in rolling mills, boiling mills, heating mills and finishing mills; (No. 97) amending requirements for licenses to practice veterinary medicine and veterinary dentistry; (No. 103) amending Anatomical Board Act as to the length of time bodies may be kept and as to expenses which may be incurred; (No. 355) defining the adulteration of sausage; (No. 276) abolishing the State Quarantine Station and offices connected therewith; (No. 270) regulating height and bulk of buildings in second-class cities; (No. 325) requiring ventilation, drainage, sanitation and purity of bakeries and cleanliness of employees, etc.

A law (No. 170) authorizing courts to remove convicts and persons confined in jails, workhouses, reformatories and industrial institutions, when seriously ill, to other institutions for suitable treatment, was also enacted.

Act 278 defines cold storage and regulates time of storage of certain food articles.

By Act No. 89-A, A Bureau of Rehabilitation was established for certain physically handicapped persons.

By Act No. 165, providing of schools, food, clothing and transportation for tubercular children was authorized.

The Department of Agriculture was re-organized by an enactment creating bureaus therein, including Bureaus of Food, Chemistry, Markets and Animal Industry; all of which have more or less bearing upon Public Health.

The Legislature also passed a law requiring all reports heretofore published annually to be made bi-ennially, (Act No. 68). This includes the Report of the Commissioner of Health which will hereafter cover a two-year period.

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No. 136.

AN ACT

Authorizing the county commissioners of any county and the corporate authorities of any city of the third class located within such county, to erect a joint county and city building or buildings to be used for hospital purposes; providing for the selection of a site by purchase, condemnation, or otherwise; authorizing the county or city to sell real estate under certain conditions; providing for the contracts and agreements to be entered into by the county and city; and authorizing the county and city to issue bonds for certain purposes.

Joint county and
municipal hos-
pitals.

Erection
authorized.

Site.

Land owned by
county.

Land owned by
city.

Approval of sale or
conveyances by
court.

Acquisition
of site.

Section 1. Be it enacted, &c., That the county commissioners of any of the several counties and the corporate authorities of any city of the third class located within such county, are hereby authorized to agree upon a site within the limits of such county, and to erect thereon a joint county and municipal building or buildings to be used by such county and city as a hospital for general purposes, or as a hospital for the care and treatment of communicable diseases, or both.

Section 2. The said county commissioners and corporate authorities may choose for the site of such joint county and municipal hospital or hospitals land owned and held by the county or land owned and held by the city.

Section 3. Whenever the site chosen consists of land owned and held by the county, the respective county commissioners may convey in fee to such city, at private sale, upon a fair valuation, such an undivided interest therein as shall be agreed upon. Whenever the site chosen consists of land owned and held by the city, the respective corporate authorities may convey in fee to such county, at private sale, upon a fair valuation, such an undivided interest therein as shall be agreed upon.

Any sale or conveyance of land or interest therein made pursuant to the aforesaid provisions of this act, shall be subject to the approval of the court of common pleas of the proper county as to the amount agreed to be paid and as to the terms and conditions thereof.

Section 4. The county commissioners and corporate authorities may acquire, in the name of such county and city, in such proportions of undivided interest as shall be agreed upon, by purchase, condemnation, or otherwise, such real estate, either vacant or occupied, as the respective county commissioners and corporate authorities may deem necessary to furnish a suitable site for the hospital or hospitals herein provided for. and may sell, convey, transfer, or abandon the same,

or any part thereof, as the said county commissioners and corporate authorities may determine.

Section 5. Whenever the county commissioners and the corporate authorities cannot agree with the owner or owners of real estate which may have been selected as aforesaid, after having decided upon the size and location of such real estate, the said county commissioners and corporate authorities may enter upon, and take possession of, and occupy such land for the purposes herein provided. The title to such real estate shall be vested in the respective county and city in fee simple. The funds in the office of the treasurers of such county and city shall be security to the owner or owners of any real estate so taken for all damages sustained by the taking of such real estate.

Power of
condemnation.

Title to real estate
condemned.

Owners' security.

Section 6. After entry by the county commissioners and corporate authorities upon such land, the said county commissioners and corporate authorities, or the owner or owners of such real estate or any one in behalf of all, may petition the court of common pleas to appoint a board of three viewers from the county board of viewers. Said court, when appointing such viewers, shall fix a time when the viewers shall meet upon the premises and view the same, which time shall not be less than twenty days nor more than thirty days after such appointment. Notice of the view shall be given to all parties in interest as the court may direct.

Petition to court.

Appointment of
viewers.

Time for view.

Notice of view.

Section 7. The viewers, having been duly sworn or affirmed according to law, shall view and examine the land so taken, and shall hear such parties as may desire to be heard. Hearings may be adjourned from time to time as the viewers may direct. After completion of the examination of the real estate, and hearing of the parties interested, the viewers shall decide, and make a true report to the court, concerning the matters set forth in the petition. Immediately after the filing of such report, notice of such filing shall be given to all parties interested, in such manner as the court may direct, which notice shall state that, unless exceptions be filed thereto within thirty days after the filing thereof, the same will be confirmed absolutely.

Hearing.

Decision.

Report.

Section 8. Within thirty days after the filing of any report, exceptions thereto may be taken by any party or parties interested in such real estate. Immediately after the filing of such report the prothonotary shall mark the same "confirmed nisi." Where no exceptions are filed thereto, said prothonotary shall enter a decree that the report is confirmed absolutely; where exceptions are filed, the court shall confirm, modify, or change such report, or refer the report back to the same or new viewers.

Exceptions.

Confirmation nisi.

Absolute
confirmation.

Modification.

Section 9. Within thirty days after the filing of any report, an appeal therefrom may be taken by any

Trial by jury.

party or parties interested to the court of common pleas, demanding a trial by jury.

Appeals to Supreme or Superior Court.

Section 10. Within six months after the final confirmation of any report, or within six months after a verdict and final judgment on appeal for a trial by jury, an appeal to the Supreme or Superior Court may be taken by any party or parties interested in such real estate, as in other cases.

Payment of award into court.

Section 11. Any amount of money awarded as herein provided, if refused by the person or persons entitled thereto, shall be paid into court, and thereafter all such persons shall look to said fund for all damages accruing by reason of the taking of such real estate.

Costs and fees.

Section 12. All costs and witness fees in any condemnation proceedings shall be paid equally by the county and city: Provided, That in cases where an appeal is taken by any property owner from the award of the viewers, and the appellant does not recover any greater amount than the viewers awarded, the appellant shall pay all costs of such appeal.

Plans and specifications.

Approval of court.

Section 13. The said county commissioners and corporate authorities shall adopt plans and specifications for the erection of such hospital building or buildings as may be deemed necessary. Upon approval of such plans and specifications by the court of common pleas of the proper county, the county commissioners and corporate authorities are authorized to erect upon such site the building or buildings according to the plans and specifications so adopted and approved. If any lands purchased or condemned have erected thereon any buildings suitable for the purposes provided for by this act, the county commissioners and corporate authorities are authorized to use such buildings and to make such repairs and alterations thereto as may be necessary.

Erection of building.

Use of purchased buildings.

Contracts for construction, etc.

Section 14. The said county commissioners and corporate authorities may enter into a joint contract or contracts, and agreement or agreements, for the construction, repair, alteration, maintenance, and operation of such hospital building or buildings, and for the payment by each of the proportionate share of the cost thereof. Such contracts and agreements may, from time to time, be modified or altered, upon approval thereof by the court of common pleas of the proper county. Similar agreements may be made, as herein provided, as to the manner and extent of the occupancy of such hospital building or buildings, and such other agreements as may be necessary to properly carry out the provisions of this act, not otherwise herein provided for.

Modification.

Occupancy.

Rules and regulations.

Section 15. The said county commissioners and corporate authorities may make rules and regulations for the proper conducting of such hospital or hospitals, and may make a joint agreement or agreements for the

purchase of the necessary equipment therein, and may make and enter into agreements for the employment and compensation of the required number of physicians, surgeons, nurses, and other employes, necessary for the proper conduct of such hospital or hospitals.

Equipment.

Nurses,
physicians, etc.

Section 16. The county commissioners of such county and the corporate authorities of any such city may incur or increase the indebtedness of the county or city to an amount sufficient to pay its share of the real estate required, and of the constructing of the hospital building or buildings aforesaid, together with the necessary equipment therein, by issuing coupon bonds, at a rate not exceeding six per centum per annum and the principal thereof reimbursable at a period not exceeding thirty years from the date of authorization.

Bonds.

APPROVED—The 23d day of May, A. D. 1919.

WM. C. SPROUL.

No. 166.

AN ACT

To amend and revise the laws creating and governing third class cities contains the following amendments of Article 11, Sections 1 and 3 of the Act of June 27, 1916 (P. L. 568).

Section 33. That article eleven, section one of said act, which reads as follows:—

“Section 1. The council of any city of the third class of the State of Pennsylvania may, by ordinance, create a board of health. The organization, powers, and duties of said board of health shall be as provided by laws now in force in relation to boards of health,” be, and the same is hereby, amended to read as follows:

Article 11, section
1, cited for amend-
ment.

Section 1. The council of any city of the third class by ordinance may create a board of health. The organization, powers, and duties of said board of health shall be as provided by laws now in force in relation to boards of health, *except the members, officers, and subordinates thereof may be appointed by the council.*

Board of Health.

Section 34. That article eleven, section three of said act, which reads as follows:—

“Section 3. *The city clerk in cities of the third class shall be ex-officio secretary of the board of health, in case the council of said city shall create a board of health under the provisions of this act,*” be, and the same is hereby, repealed.

Article 11, section
3, cited for repeal.

No. 191.

AN ACT

Authorizing the appointment of a Deputy Commissioner of Health in the Department of Health of the Commonwealth of Pennsylvania; defining the qualifications, powers and duties of said officer; and providing compensation therefor.

Department of
Health.

Deputy com-
missioner.

Section 1. Be it enacted, &c., That the Governor, by and with the consent of the Senate, be, and he is hereby, authorized to appoint a Deputy Commissioner of Health, who shall be a physician of at least ten years professional experience and a graduate of a legally constituted medical college.

Duties.

Section 2. It shall be the duty of the Deputy Commissioner of Health to perform the duties of the Commissioner of Health whenever a vacancy occurs in the office of the Commissioner of Health, or whenever by reason of absence or incapacity the Commissioner of Health is unable to perform the duties of the office, until such vacancy is filled or disability removed. It shall also be the duty of the Deputy Commissioner of Health to regularly perform such duties heretofore conferred by law upon the Commissioner of Health as the Commissioner of Health may specify or direct.

Salary.

Section 3. The Deputy Commissioner of Health shall receive an annual salary of six thousand five hundred (\$6,500) dollars and his expenses actually and necessarily incurred in the performance of his official duties, to be paid in the same manner that other salaries and expenses are paid to the Commissioner of Health and his assistants and employes.

APPROVED---The 4th day of June, A. D. 1919.

WM. C. SPROUL.

No. 198.

AN ACT

To amend section twelve, and section twenty-one as amended, of an act, approved the eighteenth day of June, one thousand eight hundred and ninety-five (Pamphlet Laws, two hundred three), entitled "An act to provide for the more effectual protection of the public health in the several municipalities of this Commonwealth."

Public health.

Section 1. Be it enacted, &c., That section twelve of an act, approved the eighteenth day of June, one thousand eight hundred and ninety-five (Pamphlet

Laws, two hundred three), entitled "An act to provide for the more effectual protection of the public health in the several municipalities of this Commonwealth," which reads as follows:—

"Section 12. *All principals or other persons in charge of schools as aforesaid are hereby required to refuse the admission of any child to the schools under their charge or supervision, except upon a certificate signed by a physician, setting forth that such child has been successfully vaccinated, or that it has previously had smallpox,*" be, and the same is hereby, amended to read as follows:—

Section 12, act of June 18, 1893 (P. L. 203), cited for amendment.

Section 12. *It shall be the duty of all school directors, superintendents, principals, or other persons in charge of any public, private, parochial, or other school, to refuse the admission of any child to any of said schools under their charge or supervision, except upon a certificate signed by a physician, setting forth that such child has been vaccinated and that a subsequent examination reveals a resulting cicatrix indicating successful vaccination, or that vaccination has been performed according to the rules and regulations promulgated by the Commissioner of Health, with the sanction and advice of the Advisory Board of the Department of Health, or that it has previously had smallpox. All certificates of vaccination shall be issued in accordance with the rules and regulations promulgated by the Commissioner of Health with the sanction and advice of the Advisory Board of the Department of Health.*

School children must be vaccinated.

Certificate.

Subsequent examination.

Rules and regulations of Department of Health.

Section 2. That section twenty-one of said act, which, as amended by an act, approved the twenty-second day of April, one thousand nine hundred and three (Pamphlet Laws, two hundred forty-four), entitled "An act to amend the twenty-first section of an act, entitled 'An act to provide for the more effectual protection of the public health in the several municipalities of this Commonwealth,' approved the eighteenth day of June, Anno Domini one thousand eight hundred and ninety-five; limiting the time in which actions may be brought for the recovery of fines or penalties under said act," reads as follows:—

"Section 21. Any physician, undertaker, principal of a school, superintendent of a Sunday school, sexton, janitor, head of a family, or any other person or persons named in this act, who shall fail, neglect, or refuse to comply with, or who shall violate, any of the provisions or requirements of this act, shall, for every such offense, upon conviction thereof before any mayor, burgess, alderman, police magistrate, or justice of the peace of the municipality in which said offense was committed, be liable to a fine or penalty therefor of not less than five dollars nor more than one hundred dollars; which said fines or penalties shall be paid

Section 21, act of April 22, 1903 (P. L. 244), cited for amendment.

into the treasury of said municipality; and in default of payment thereof, such person or persons, so convicted, shall undergo an imprisonment in the jail of the proper county for a period not exceeding sixty days: *Provided however, That all actions for the recovery of any fine or penalty for the violation of any of the provisions of this act shall be commenced within sixty days from the commission of the offense, and not afterwards,* be, and the same is hereby, amended to read as follows:—

Penalty for admitting unvaccinated children.

Jurisdiction.

Section 21. Any physician, undertaker, principal of a school, superintendent of a Sunday school, sexton, janitor, head of a family, or any other person or persons named in this act, who shall fail, neglect, or refuse to comply with, or who shall violate, any of the provisions or requirements of this act, shall, for every such offense, upon conviction thereof before any mayor, burgess, alderman, police magistrate, or justice of the peace, be liable to a fine or penalty therefor of not less than five dollars nor more than one hundred dollars; which said fines or penalties shall be paid into the *school fund* of the municipality *in which the offense was committed*; and in default of payment thereof, such person or persons, so convicted, shall undergo an imprisonment in the jail of the proper county for a period not exceeding sixty days.

APPROVED—The 5th day of June, A. D. 1919.

WM. C. SPROUL.

No. 210.

AN ACT

Authorizing boroughs maintaining a sewerage system and sewage disposal works to supply sewage service and extend sewer mains and pipes outside of the limits of the borough, provided such privilege shall not conflict with the rights of any sewer company or other borough; and granting the right of eminent domain for such purpose, and prescribing the procedure thereunder.

Boroughs.

Sewerage system.

Extension beyond borough limits.

Rates.

Section 1. Be it enacted, &c., That whenever any borough is maintaining and operating a sewerage system and sewage purification or disposal works, it shall be lawful for such borough to supply sewerage service to municipalities, persons, and corporations, outside the limits of such borough, and to enter into contracts for such service at rates not less than those required to be paid by persons and corporations within the limits of such borough, but no such privilege shall conflict with the rights of any sewer company or the rights of any other borough.

Section 2. That for the purpose of supplying such sewerage facilities, any such borough may extend the

necessary sewer mains and pipes, beyond the limits of such borough, to the points where such sewerage is to be collected and received, and shall have the power to enter upon and condemn such lands, property, and materials, for the construction of such sewer mains and pipes as may be necessary to the furnishing of such sewerage service.

Laying of pipes.

Eminent domain.

Section 3. Before entry shall be made upon private property, without the owner's consent, for the purpose of laying any such sewer mains or pipes or constructing such sewer collection system outside of the limits of the borough, security for all damages which may be done shall be first given to such owner, in such form and in such amount as the court of common pleas of the county may direct; and all damages caused by the construction or laying of such sewer mains or pipes or by the taking of lands and materials therefor shall be ascertained in the manner provided for the assessment of damages for the taking of lands for public improvements in boroughs, and such damages shall be paid from the borough treasury.

Security to land owners.

Ascertainment of damages.

Section 4. All acts or parts of acts inconsistent with or supplied by this act are hereby repealed.

Repeal.

APPROVED—The 7th day of June, A. D. 1919.

WM. C. SPROUL.

No. 253.

AN ACT

To amend section one thousand five hundred and four of an act, approved the eighteenth day of May, one thousand nine hundred and eleven (Pamphlet Laws, three hundred and nine), entitled "An act to establish a public school system in the Commonwealth of Pennsylvania, together with the provisions by which it shall be administered, and prescribing penalties for the violation thereof; providing revenue to establish and maintain the same, and the method of collecting such revenue; and repealing all laws, general, special or local, or any parts thereof, that are or may be inconsistent therewith."

Section 1. Be it enacted, &c., That section one thousand five hundred and four of an act, approved the eighteenth day of May, one thousand nine hundred and eleven (Pamphlet Laws, three hundred and nine), entitled "An act to establish a public school system in the Commonwealth of Pennsylvania, together with the provisions by which it shall be administered, and prescribing penalties for the violation thereof; providing revenue to establish and maintain the same, and the method of collecting such revenue; and repealing all laws, general, special, or local, or any parts thereof, that are or may be inconsistent therewith," which reads as follows:—

Public school system.

Medical inspection.

"Section 1504. If, in *any* school district which is required by this act to provide medical inspection for its public schools, such medical inspection as is herein

Section 1504, act of May 18, 1911 (P. L. 300), cited for amendment.

required is not furnished within thirty days after the beginning of the school year, the Commissioner of Health shall, after two weeks written notice to the board of school directors of such district, appoint a properly qualified medical inspector, or inspectors, for the district, for the remainder of the school year, and shall fix the compensation for the same which shall be paid by the district," is hereby amended to read as follows:—

Report of names of inspectors by secretary of board.

Failure to make inspection.

Notice to Commissioner of Health.

Appointment of inspector.

Section 1504. In every school district which is required by this act to provide medical inspection for its public schools, *the secretary of the school board or the district superintendent of schools shall, on or before the first day of September of each year, report to the Commissioner of Health the names of the medical inspectors or the name of the chief medical inspector, with the number of assistants or additional inspectors, appointed for the ensuing term, and if such medical inspection as is herein required is not furnished within thirty days after the beginning of the school term, the Commissioner of Health shall, after two weeks written notice to the board of school directors of such district, appoint a properly qualified medical inspector or inspectors for the district for the remainder of the school term, and shall fix the compensation for the same which shall be paid by the district.*

APPROVED—The 20th day of June, A. D. 1919.

WM. C. SPROUL.

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No. 271.

AN ACT

To amend an act, approved the eighteenth day of May, one thousand nine hundred and eleven (Pamphlet Laws, three hundred and nine), entitled "An act to establish a public school system in the Commonwealth of Pennsylvania, together with the provisions by which it shall be administered, and prescribing penalties for the violation thereof; providing revenue to establish and maintain the same, and the method of collecting such revenue; and repealing all laws, general, special, or local or any parts thereof, that are or may be inconsistent therewith."

Public school system.

Medical inspection of pupils.

Section 1. Be it enacted, &c., That section one thousand five hundred and one of an act, approved the eighteenth day of May, one thousand nine hundred and eleven (Pamphlet Laws, three hundred and nine), entitled "An act to establish a public school system in the Commonwealth of Pennsylvania, together with the provisions by which it shall be administered, and prescribing penalties for the violation thereof; providing revenue to establish and maintain the same, and the method of collecting such revenue; and repealing all

laws, general, special, or local, or any parts thereof, that are or may be inconsistent therewith," which reads as follows:—

"Section 1501. Every school district of the first, second, or third class in this Commonwealth shall annually provide medical inspection of all the pupils of its public schools by proper medical inspectors, to be appointed by the board of school directors of the district. Such medical inspection shall be made in the presence of the parent or guardian of the pupil, when so requested by parent or guardian. All such medical inspectors shall be physicians legally qualified to practice medicine in this Commonwealth, who have had at least two years experience in the practice of their profession and shall be paid such amounts as the boards of school directors may determine: Provided, That nothing in this act shall preclude the appointment of health officers of municipalities as medical inspectors in the school districts of this Commonwealth: *Provided further, That if in any year, before the first day of August, the board of school directors of any school district of the third class shall decide, by a majority vote of the members thereof, not to have medical inspection in any or all of the schools of such district, such medical inspection shall not be made in such schools during the following school year,*" is hereby amended to read as follows:—

Section 1501. Every school district of the first, second, or third class in this Commonwealth shall annually provide medical inspection of all the pupils of its public schools by proper medical inspectors, to be appointed by the board of school directors of the district. Such medical inspection shall be made in the presence of the parent or guardian of the pupil, when so requested by parent or guardian. All such medical inspectors shall be physicians legally qualified to practice medicine in this Commonwealth, who have had at least two years experience in the practice of their profession, and shall be paid such amounts as the boards of school directors may determine: Provided, That nothing in this act shall preclude the appointment of health officers of municipalities as medical inspectors in the school districts of this Commonwealth.

Section 2. That section one thousand five hundred and three of said act, which reads as follows:—

"Section 1503. In every school district of the fourth class in this Commonwealth the State Department of Health shall provide, in such manner as it may determine, medical inspection for all the pupils in the public schools by proper medical inspectors, to be appointed by the State Commissioner of Health, at the expense of said department. All such medical inspectors shall be legally qualified physicians, who have had not less than two years experience in the practice of their profes-

Section 1501, act of May 18, 1911 (P. L. 309), cited for amendment.

Districts of first, second and third classes.

Presence of parents or guardians.

Inspectors.

Compensation.

Proviso.

Section 1503, act of May 18, 1911 (P. L. 309), cited for amendment.

sion. Such medical inspection shall be made in the presence of the parent or guardian of the pupil, when so requested by parent or guardian: *Provided, That if the board of school directors of any school district of the fourth class shall decide, by a majority vote of the members thereof, not to have medical inspection of the pupils in a part or all of the schools of such district, and the Commissioner of Health is officially notified thereof in writing before the first day of July, such medical inspection shall not be made in such schools during the following school year,*" is hereby amended to read as follows:—

Districts of fourth class.

Inspectors.

Presence of parents or guardians.

Section 1503. In every school district of the fourth class in this Commonwealth the State Department of Health shall provide, in such manner as it may determine, medical inspection for all the pupils in the public schools by proper medical inspectors, to be appointed by the State Commissioner of Health, at the expense of said department. All such medical inspectors shall be legally qualified physicians, who have had not less than two years experience in the practice of their profession. Such medical inspection shall be made in the presence of the parent or guardian of the pupil, when so requested by parent or guardian.

Section 3. That section one thousand five hundred and five of said act, which reads as follows:—

Section 1505, act of May 18, 1911 (P. L. 309), cited for amendment.

"Section 1505. The medical inspectors shall, at least once each year, inspect and carefully test and examine all pupils in the public schools of their districts, giving special attention to defective sight, hearing, or other disabilities and defects specified by the Commissioner of Health in his directions for the medical examinations of schools. Each medical inspector shall make to the teacher, or, if the board of school directors so directs, to the principal or district superintendent of schools, a written report concerning all pupils found to need medical or surgical attention, and giving careful directions concerning the care of each pupil who needs special care while in school. The teacher, or the principal or district superintendent, shall keep such report until the end of the school year, shall carry out as carefully as possible said directions concerning the special care of pupils while in school, and shall promptly send a copy of the medical inspector's report upon each child to the parents or guardian thereof," is hereby amended to read as follows:—

Annual inspection.

Teeth.

Report of inspectors.

Section 1505. The Medical inspectors shall, at least once each year, inspect and carefully test and examine all pupils in the public schools of their districts, giving special attention to defective sight, hearing, *teeth*, or other disabilities and defects specified by the Commissioner of Health in his directions for medical examinations of schools. Each medical inspector shall make to the teacher, or, if the board of school directors so

directs, to the principal or district superintendent of schools, a written report concerning all pupils found to need medical or surgical attention, and giving careful directions concerning the care of each pupil who needs special care while in school. The teacher or the principal or district superintendent shall keep such report until the end of the school year, shall carry out as carefully as possible said directions concerning the special care of pupils while in school, and shall promptly send a copy of the medical inspector's report upon each child to the parents or guardian thereof.

APPROVED—The 23d day of June, A. D. 1919.

WM. C. SPROUL.

No. 400.

AN ACT

To safeguard human life and health throughout the Commonwealth by providing for the reporting, quarantining, and control of diseases declared communicable by this act and by regulation of the Department of Health; providing for the prevention of infection therefrom; and prescribing penalties.

Section 1. Be it enacted, &c., That the following diseases are hereby specifically declared to be communicable; to wit, Public health.

Actinomycosis, anthrax, bubonic plague, cerebrospinal meningitis (epidemic), (cerebrospinal fever, spotted fever), chicken-pox, Asiatic cholera, diphtheria, (diphtheritic croup, membranous croup, putrid sore throat), epidemic dysentery (bacillary or amebic dysentery), erysipelas, German measles, glanders (farcy), rabies (hydrophobia), leprosy, malarial fever, measles, mumps, pneumonia (true), puerperal fever, relapsing fever, scarlet fever (scarlatina, scarlet rash), smallpox (variola, varioloid), tetanus, trachoma, trichiniasis, tuberculosis in any form, typhoid fever, para typhoid fever, typhus fever, whooping-cough, yellow fever, anterior poliomyelitis, impetigo contagiosa, pellagra, scabies, or uncinariasis. Communicable diseases enumerated.

The Department of Health may, when it deems it necessary to safeguard human life and health, declare as communicable diseases additional to those hereinabove specifically so declared, but only in the following manner; that is to say, Department of Health may declare other diseases to be communicable.

The Commissioner of Health shall call a meeting of the advisory board, five days written notice of which shall be sent to each member of the board. The notice shall state the time and place of meeting and the fact that a proposed regulation will be presented declaring a certain disease or diseases—setting it or them forth by name—to be communicable. The notice shall also

state such of the diseases as should, in the opinion of the Commissioner of Health, be quarantinable or reportable, or both, and the quarantine period therefor.

If at such meeting four members of the advisory board personally present shall vote affirmatively upon such proposed regulation, any disease therein set forth is or are hereby declared communicable, with the same force and effect as if expressly enumerated in this act. Any such disease is hereby further declared quarantinable or reportable, or both, as may be provided in the regulation, with the force and effect hereinbefore referred to. Printed notice of the regulation shall be promulgated in the same manner as is provided by law in the case of other regulations of the Department of Health.

The regulation may be amended at such meeting so as to eliminate some or any of the diseases set forth in the notice, but no disease shall be declared communicable which is not contained in the notice.

Duty of physicians
to report communi-
cable disease.

Every physician practicing in any portion of this Commonwealth who shall treat or examine any person suffering from or affected with any disease herein specifically declared communicable and reportable or by regulation declared communicable and reportable, shall, if said case shall be located in a township of the first class, a borough, or a city, forthwith make a report in writing to the health authorities of said township, city, or borough; and, if said case shall be located in a township of the second class, or a city, borough, or township of the first class not having a board of health or body acting as such, to the health officer appointed by the State Department of Health for such district; upon blanks supplied for that purpose, in which report he shall, over his or her own signature, state the name of the disease, and the name, age, sex, color, nativity, and occupation, if any, of the person suffering therefrom, together with the street and house number of the premises in which said person may be located, or otherwise sufficiently designate the same, the date of the onset of the disease, the name and occupation of the householder in whose family the disease may have occurred, the number of children in said household attending school and the name or names of the school or schools so attended, together with such information relating to said case as may be required by said health authorities and the State Department of Health.

Contents of report.

Duties of health
officers upon re-
ceipt of report.

Section 2. Upon receipt by the health authorities of any township of the first class, borough, or city, or by the health officer of the State Department of Health, of a report of the existence of a case of anthrax, bubonic plague, cerebrospinal meningitis (epidemic), (cerebrospinal fever, spotted fever), chicken-pox, Asiatic cholera, diphtheria (diphtheritic croup, membranous croup, putrid sore throat), German measles,

glanders (farcy), leprosy, measles, mumps, scarlet fever (scarlatina, scarlet rash), smallpox (variola, varioloid), typhoid fever, para typhoid fever, typhus fever, whooping-cough, yellow fever, or any disease declared communicable and quarantinable by regulation as hereinafter provided, the said health authorities or the health officer of the State Department of Health, as the case may be, shall quarantine or cause to be quarantined the premises in which such disease exists and any person or persons who has or have been exposed thereto, in the manner prescribed by the rules and regulations both of said health authorities and the State Department of Health; and shall post or cause to be posted, in a conspicuous place or places upon the premises in which said disease may be located, a placard or placards, upon which shall be printed in conspicuous letters the name of the disease from which the person or persons in said house or premises is or are suffering, with the warning that the said premises are quarantined, that no person or persons other than the attending physician and trained nurse shall enter or leave the said premises, except by permission of the health authorities, and setting forth the penalties prescribed by this act for violations of quarantine: Provided, That variola or varioloid shall be placarded as "smallpox," and that diphtheritic croup, membranous croup, and putrid sore throat shall be placarded as "diphtheria." that scarlatina and scarlet rash shall be placarded as "scarlet fever," and that para typhoid fever shall be placarded as "typhoid fever:" Provided further, That in addition to the placarding aforesaid, said health authorities may, for the purpose of enforcing quarantine regulations, place a guard or guards over said house or premises.

Section 3. That the said placard or placards shall remain in place until the expiration of the quarantine period fixed by the health authorities and the recovery, death, or removal of the person or persons affected; and shall only be removed by the health officer, at which time he shall disinfect the premises, except for typhoid fever and para typhoid fever, in accordance with the rules and regulations of the health authorities and the State Department of Health regarding the destruction and disinfection of infected bedding, clothing, and other articles which have been exposed to infection and the disinfection of rooms, premises, and inmates.

Section 4. The quarantine period for anthrax, bubonic plague, cerebrospinal meningitis (epidemic), (cerebrospinal fever, spotted fever), Asiatic cholera, typhus fever, yellow fever, relapsing fever, leprosy, and whooping-cough shall be until the recovery, death, or removal of the patient so suffering, and shall be determined in accordance with the rules and regulations of the health authorities. The quarantine period for

Establishment of quarantine.

Placarding premises.

Contents of placard.

Proviso.

Names to be given certain diseases on placards.

Proviso.

Guarding of premises.

Duration of placarding.

Disinfection of premises.

Quarantine periods.

small-pox (variola, varioloid) and scarlet fever (scarlatina, scarlet rash) shall be a minimum period of thirty days or until such time thereafter as the last person in the premises so suffering shall have fully recovered or until death or removal. The quarantine period for diphtheria (diphtheritic croup, membranous croup, putrid sore throat) shall be a minimum period of twenty-one days or until complete recovery or the death or removal of the patient: Provided, That if antitoxin has been used for curative purposes for the patient and for the immunizing of all of the inmates of the premises, and two negative bacteriological cultures have been secured from the diseased area of each patient on the premises, for two successive days, the minimum period of quarantine may be fourteen days. The quarantine period for measles, German measles, chicken-pox, and mumps shall be for a minimum period of sixteen days or until the recovery of the last person on the premises so suffering or until complete recovery or the death or removal of the patient.

Proviso.

Use of antitoxin.

Exclusion of persons having certain communicable disease from certain places.

Section 5. No child or other person suffering from anthrax, bubonic plague, cerebrospinal meningitis (epidemic), (cerebrospinal fever, spotted fever), Asiatic cholera, smallpox (variola, varioloid), typhus fever, yellow fever, relapsing fever, leprosy, diphtheria (diphtheritic croup, membranous croup, putrid sore throat), measles, German measles, glanders (farcy), chicken-pox, mumps, whooping-cough, or any disease declared communicable and quarantinable by regulation as hereinbefore provided, shall be permitted to attend any place of amusement or any church or any other public gathering, or to be exposed on any public street or in any store, shop, factory, or other place of business, or be permitted to attend any public, private, parochial, Sunday, or other school; and the teachers of public schools and the principals, superintendents, teachers, or other persons in charge of private, parochial, Sunday, or other similar schools are hereby required to exclude any of such persons from said schools; such exclusion to continue until the case has recovered, the quarantine lifted, and the premises thoroughly disinfected.

Duties of teachers and school officers.

Period of exclusion.

Persons having scarlet fever.

Exclusion from certain places.

Section 6. No child or other person suffering from scarlet fever (scarlatina, scarlet rash) shall be permitted to attend any place of amusement or any church or other public gathering, or to be exposed on any public street or in any store, shop, factory or other place of business, or be permitted to attend any public, private, parochial, Sunday, or other school; and the teachers of public schools and the principals, superintendents, teachers, or other persons in charge of private, parochial, Sunday, or other schools are hereby required to exclude any and all such persons and children from said school; such exclusion to continue for a

Duty of teachers and school officers.

Period of exclusion.

period of ten days following the removal of quarantine and a thorough disinfection of the premises, subject to a certificate of complete recovery furnished to the health authorities by the attending physician.

Section 7. No child or other person residing in the same premises with any person suffering from anthrax, bubonic plague, cerebrospinal meningitis (epidemic), (cerebrospinal fever, spotted fever), Asiatic cholera, smallpox (variola, varioloid), typhus fever, yellow fever, scarlet fever (scarlatina, scarlet rash), relapsing fever, leprosy, diphtheria (diphtheritic croup, membranous croup, putrid sore throat), measles, German measles, chicken-pox, mumps, or any disease declared communicable and quarantinable by regulation as hereinbefore provided, shall be permitted to attend any place of amusement or any church or other public gathering, or to be exposed, except by permission of the health authorities, on any public street or in any store, shop, factory, or other place of business, or be permitted to attend any public, private, parochial, Sunday, or other schools; and the teachers of public schools and the principals, superintendents, teachers or other persons in charge of private, parochial, Sunday, or other similar schools are hereby required to exclude any and all such persons from said schools; such exclusion to continue until quarantine is lifted and the premises thoroughly disinfected.

Section 8. Any child or person residing on the same premises with any person suffering from anthrax, cerebrospinal meningitis (epidemic), (cerebrospinal fever, spotted fever), or typhus fever may be allowed, after taking a disinfecting bath and putting on disinfected clothing, to remove from the said premises and take up his or her residence on other premises, and may, after such removal, be admitted into any of the said schools; and any child or person residing on the same premises with any one suffering from diphtheria (diphtheritic croup, membranous croup, putrid sore throat) may be allowed, after taking a disinfecting bath and putting on disinfected clothing, and after antitoxin has been administered for immunizing purposes, to remove from the said premises and take up his or her residence on other premises occupied only by adults, and may, after five days from said removal, be admitted into any of the said schools; and any child or person residing on the same premises with any child suffering from scarlet fever (scarlatina, scarlet rash), measles, German measles, mumps, or chicken-pox may be allowed, after taking a disinfecting bath and putting on disinfected clothing, to remove from the said premises and take up his or her residence on other premises occupied only by adults or by children who are immune to the disease (scarlet fever, scarlatina, scarlet rash, measles,

Residents of premises in which a person has a communicable disease.

Exclusion from certain places.

Duty of teachers and school officers.

Period of exclusion.

Removal from infected premises.

Admission to school.

Premises infected with diphtheria.

Removal from.

Admission to school.

Premises infected with scarlet fever, etc.

Removal from.

Admission to
school.

Proviso.

Immunes.

Premises infected
with relapsing
fever.

Removal from.

Admission to
schools.

Premises infected
with other com-
municable diseases.

Duty of teachers
to exclude pupils
having certain
symptoms.

Reports of such
exclusion.

Readmission to
school.

Certificate.

German measles, mumps, or chicken-pox) existing on the said premises from which the said child or person has removed—such immunity being shown by the official health records,—and may, fourteen days after such removal, be admitted to any of the said schools: Provided, That if the child or person residing on the same premises with any person suffering from any of the said diseases (scarlet fever, scarlatina, scarlet rash, measles, German measles, mumps, or chicken-pox), and removing therefrom as above provided, is himself or herself immune from the disease existing on the said premises by virtue of a former attack, this fact being shown by the official health records or by other evidence satisfactory to the health authorities, such immune child or person may, on the day following such removal, be admitted to any of the said schools; and any child or person residing on the same premises with any person suffering from relapsing fever may be allowed, after taking a disinfecting bath and putting on disinfected clothing, to remove from the said premises and take up his or her residence on other premises, and may, after ten days from such removal, be admitted to any of the said schools. In the case of children or persons residing on the same premises with any child or person suffering from any disease declared communicable and quarantinable as hereinbefore provided, the Department of Health, by general regulation, shall determine the conditions upon which said child or person may take up his residence upon other premises or be admitted to school.

Section 9. That every teacher, principal, superintendent, or other person or persons in charge of any public, private, parochial, Sunday, or other school having in any such school any child or person showing an unusual rash or skin eruption, or complaining of soreness in the throat, or having symptoms of whooping cough, or any disease of the eye, shall immediately exclude such child or other person from the schools pending the action of the health authorities, and shall report such fact to the health officer of the city, borough, or township, giving the name and residence of such child or other person.

Section 10. No child or other person excluded from any school by the provisions of this act shall be readmitted thereto, unless he or she or some person on his or her behalf shall furnish to the principal, superintendent, or teacher, or other person in charge of said school, a certificate setting forth that the conditions for such readmission prescribed by this act have been complied with; which certificate shall be signed by a person to be designated for that purpose, in cities, boroughs, and townships of the first class, by the health authorities thereof exclusively, and in town-

ships of the second class, and cities, boroughs, and townships of the first class not having boards of health or bodies acting as such, by the State Department of Health; and the registry of all public, private, parochial, Sunday, and other schools shall exhibit the names and residences of all children and persons excluded therefrom or readmitted thereto agreeably to the provisions of this or any other act of Assembly; and said register shall be open at all times to the inspection of the city, borough, or township authorities, and the State Department of Health, and their respective officers and agents.

Registration of persons excluded or readmitted.

Inspection of register.

Section 11. Blanks whereon to make the reports and certificates required by this act shall be supplied, in cities, boroughs, and townships of the first class, by the health authorities thereof, respectively; and in townships of the second class, and in cities, boroughs, and townships of the first class not having boards of health or bodies acting as such, by the State Department of Health.

Blanks for reports and certificates.

Section 12. It shall be the duty of the health authorities of cities, boroughs, and townships of the first class, respectively, to furnish daily, by mail or otherwise, to principals, superintendents, teachers, and other persons in charge of public, private, parochial, Sunday, and other schools, a printed or written bulletin, containing the name, location, and disease of all persons suffering from any of the diseases comprehended by section five and six of this act, upon receipt by them of reports of such cases from physicians as required by section one of this act; and such bulletin shall be daily furnished to such persons in charge of such schools in townships of the second class, and in cities, boroughs, and townships of the first class not having boards of health or bodies acting as such, by the health officer for the State Department of Health.

Daily bulletins to be furnished by health authorities.

Section 13. Upon the removal to a hospital or other place, or upon the discharge by the recovery or death, of any person or persons who has or have suffered from tuberculosis or any of the diseases comprehended by section two of this act, all premises which have been occupied by the said person or persons while suffering from any of the said diseases shall be disinfected or destroyed, at such time and in such manner as may be authorized and required by the health authorities.

Disinfection or destruction of premises after removal or discharge of patient therefrom.

Section 14. No person suffering from any of the diseases comprehended by section two of this act, nor anyone who has charge of the persons so suffering, shall enter any hired vehicle or other public conveyance, or permit anyone in his or her charge who is suffering therefrom to enter such vehicle, without previously securing the consent of health authorities and

Exclusion from hired vehicles and public conveyances.

Consent of health authorities.

Disinfection of
vehicle.

notifying the owner or driver thereof that he or she or the person in his or her charge is so suffering; and the owner or driver of such vehicle shall immediately provide for the disinfection of such conveyance, under the direction of the health authorities, after it has, with the knowledge of such owner or driver, conveyed any such sufferer.

Exposure of in-
fected person in
public places pro-
hibited.

Section 15. No person suffering from anthrax, bubonic plague, cerebrospinal meningitis (epidemic), (cerebrospinal fever, spotted fever), chicken-pox, Asiatic cholera, diphtheria (diphtheritic croup, membranous croup, putrid sore throat), measles, German measles, glanders (farcy), mumps, scarlet fever (scarlatina, scarlet rash), smallpox (variola, varioloid), typhus fever, typhoid fever, yellow fever, whooping-cough, or any disease declared communicable and quarantinable by regulation as hereinbefore provided, shall wilfully expose himself or herself in any street or public place or public conveyance, nor shall any person in charge of anyone so suffering thus expose the sufferer.

Dealing with in-
fected personal
property prohibi-
ted.

Section 16. No person, without previous disinfection, shall give, lend, sell, transmit, or expose any bedding, clothing, rags, or other articles, which have been exposed to infection from any of the diseases comprehended by section one of this act: Provided, That such restriction shall not apply to the transmission of articles with proper precaution for the purpose of having the same disinfected.

Proviso.

Letting of rooms
or houses.

Section 17. No person shall let any room, house, or part of a house, in which there has been a person suffering from tuberculosis or any of the diseases comprehended by section two of this act, without having such room, house, or part of a house, and all articles therein, previously disinfected to the satisfaction of the health authorities. The keeping of a hotel, boarding-house, or apartment-house shall be deemed as letting a part of a house to any person who shall be admitted as a guest into such hotel, boarding-house, or apartment-house.

Disinfection.

Hotels and board-
ing houses.

Additional rules
and regulations of
local authorities.

Section 18. The health authorities of the several townships, boroughs, and cities of this Commonwealth may, and they are hereby authorized and empowered to, establish additional rules and regulations regarding the isolation and quarantine of persons who may be suffering from any of the diseases comprehended by section one of this act, and for the destruction, disinfection, and fumigation of bedding, clothing, or other infected articles, and for the disinfection and fumigation of houses and premises, and for the carrying out of the provisions of this act, as they may in good faith declare the public safety and health demand; which rules and regulations they may, from

time to time, alter or amend, but in no instance shall such rules abridge in any way the provisions of this act or the regulations of the State Department of Health.

Section 19. In the preparation for burial of the body of any person who has died of Asiatic cholera, glanders (farcy), bubonic plague, smallpox (variola, varioloid, yellow fever, typhus fever, scarlet fever (scarlatina, scarlet rash), relapsing fever, cerebrospinal meningitis (epidemic), (cerebrospinal fever, spotted fever), diphtheria (diphtheritic croup, membranous croup, putrid sore throat), tetanus or leprosy, it shall be the duty of the undertaker or person acting as such to thoroughly disinfect and place such body within the coffin or casket in which it is to be buried, within six hours after being first called upon to take charge of the same, provided said call is made between the hours of five ante meridian and eleven post meridian; otherwise such body shall be placed in such coffin or casket within twelve hours; the coffin or casket then to be closed tightly, and not again opened unless permission be granted by the health authorities for special and satisfactory cause shown.

Burial preparations.

Duty of undertaker.

Section 20. The body of a person who has died of any of the diseases mentioned in section nineteen of this act shall not remain unburied for a longer period of time than thirty-six hours after death, unless special permission be granted by the health authorities extending the time during which said body shall remain unburied for special and satisfactory cause shown. The undertaker or person acting as such shall be responsible for any violation of the provisions of this section.

Interment.

Section 21. All services held in connection with the funeral of the body of a person who has died of any of the diseases mentioned in section nineteen of this act shall be private, and the attendance thereat shall include only the immediate adult relatives of the deceased who may not at the time be under absolute quarantine restrictions and the necessary number of adult pall-bearers, and any advertisement of such funeral shall state the cause of death.

Funeral services.

Section 22. The body of a person who has died of any of the diseases mentioned in section nineteen of this act shall, in no instance, be taken into any church, chapel, public hall, or public building, for the holding of funeral services. The undertaker or person acting as such and the sexton, janitor, or other person having control of such church, chapel, public hall, or public building, shall be responsible for any violation of the provisions of this section.

Corpse not to be taken into a public building.

Section 23. No undertaker or person acting as such at the funeral or burial of the body of a person who has died of any of the diseases mentioned in section

Conveyances at funeral.

nineteen of this act, shall furnish or provide for such funeral or burial more than the necessary number of conveyances for such adult relatives as are mentioned in section twenty-two of this act and pall-bearers; and all such conveyances shall be fumigated and disinfected, at such time and in such manner as may be directed and required by the health authorities.

Vehicles in which
corpse may be con-
veyed.

Section 24. The body of a person who has died of any of the diseases mentioned in section nineteen of this act shall not be conveyed from any dwelling or other building or place to any cemetery or other point or place, except in a hearse or other vehicle used for the purpose of conveying corpses only, or in such vehicles as shall be satisfactory to the health authorities, and under such regulations as they may in any case adopt. The undertaker or person acting as such having charge of the funeral or transportation of such body shall be responsible for any violation of the provisions of this section.

Weekly reports by
local health
authorities.

Section 25. The health authorities of the several cities, boroughs, and townships of the first class shall, at the end of each week and for the fraction of each week occurring at the end of each month, report to the State Department of Health, upon blanks supplied for that purpose, a list of all cases of communicable diseases comprehended by section one of this act which have been reported to them during said period; which report shall contain the name of each person suffering therefrom, respectively, and his or her age, sex, color, and nativity, together with the name of the disease, and the date of the onset thereof; and, in the event of no reports of any of said diseases having been received by the aforesaid health authorities, respectively, during any said period, that fact shall be reported to the State Department of Health.

Tampering with
placards.

Section 26. Any person who shall remove, deface, cover up, or destroy, or cause to be removed, defaced, covered up, or destroyed, any placard relating to any of the diseases comprehended by section two of this act, shall for every such offense, upon conviction thereof in a summary proceeding before any magistrate or justice of the peace of the county wherein such offense was committed, be sentenced to pay a fine of not less than ten (\$10) dollars or more than one hundred (\$100) dollars, to be paid to the use of said county, and costs of prosecution, or to be imprisoned in the county jail for a period of not less than ten days or more than thirty days, or both, at the discretion of the court. Any person, other than the attending physician or trained nurse, who shall enter or leave any quarantined premises without having secured permission from the health authorities; or who shall violate any of the quarantine restrictions imposed by this act or by the rules and regulations of the health au-

Penalty.

Entering quaran-
tined premises.

Violating quaran-
tine restrictions.

thorities of any city, borough, or township of the first class or the rules and regulations of the State Department of Health; or who shall interfere with a health officer or any other duly qualified agent of the State Department of Health or of any local board or department of health in the discharge of his official duties in the placarding, quarantining, disinfecting, or releasing from quarantine of any premises or in the investigation of any alleged case of quarantinable disease,—shall for every such offense, upon conviction thereof in a summary proceeding before any magistrate or justice of the peace of the county wherein said offense was committed, be sentenced to pay a fine of not less than fifty (\$50) dollars or more than one hundred (\$100) dollars, to be paid to the use of the said county, and costs of prosecution, or to be imprisoned in the county jail for a period of not less than ten or more than thirty days, or both, at the discretion of the court.

Interference with health officers.

Penalty.

Any physician, undertaker, teacher of a public school, principal of a school, superintendent of a Sunday school, sexton, janitor, parent or guardian, or any other person or persons who shall fail, neglect, or refuse to comply with, or who shall violate, any of the provisions of this act,—shall for every such offense, upon conviction thereof in a summary proceeding before any magistrate or justice of the peace of the county wherein said offense was committed, be sentenced to pay a fine of not less than twenty (\$20) dollars or more than one hundred (\$100) dollars, to be paid to the use of said county, and costs of prosecution, or to be imprisoned in the county jail for a period of not less than ten or more than thirty days, or both, at the discretion of the court.

Violations of this act.

Penalty.

Section 27. Section one (except the enacting clause thereof), and sections two, three, four, five, six, seven, eight, nine, ten, eleven, thirteen, fourteen, fifteen, sixteen, seventeen, eighteen, and nineteen of an act, entitled "An act to provide for the more effectual protection of the public health in the several municipalities of this Commonwealth," approved June eighteenth, one thousand eight hundred and ninety-five, and the act of May fourteenth, Anno Domini nineteen hundred and nine, entitled "An act to safeguard human life and health throughout the Commonwealth, by providing regulations for the control of certain communicable diseases and the prevention of infection therefrom, and prescribing penalties for violation of said regulations," and the act, approved the twenty-eighth day of May, Anno Domini one thousand nine hundred and fifteen, entitled "An act to safeguard human life and health throughout the Commonwealth by providing for the reporting, quarantining, and control of cer-

Part of act of June 18, 1895 (P. L. 203), cited for repeal.

Act of May 14, 1909 (P. L. 855), cited for repeal.

Act of May 28, 1915 (P. L. 617), cited for repeal.

tain communicable diseases, and for the prevention of infection therefrom, and prescribing penalties for violations of the act," are hereby repealed.

Repeal.

All acts or parts of acts inconsistent with this act are hereby repealed.

APPROVED—The 17th day of July, A. D. 1919.

WM. C. SPROUL.

No. 411.

AN ACT

Authorizing cities of the third class to prohibit the keeping and slaughtering of horses, cows, calves, swine, sheep, goats, and any other animal or fowl deemed objectionable by the department of health.

Cities of the third class.

Slaughtering and keeping of certain animals may be prohibited.

Permit.

Fee.

Duration.

Section 1. Be it enacted, &c., That from and after the passage of this act, it shall be lawful for any city of the third class to prohibit the keeping and slaughtering of horses, cows, calves, swine, sheep, goats, and other animals or fowls deemed objectionable by the department of health in any dwelling, rooming-house, or tenement, or any part thereof; nor shall any of the aforesaid animals or such fowl be kept in the yard of any such building or the lot thereof or the property adjoining, in closely built up sections, without the person desiring to keep the same first having obtained a permit from the department of health. Application for such permit shall be accompanied by a fee of fifty cents, and such permit when granted shall expire not later than the calendar year for which it is issued.

APPROVED—The 17th day of July, A. D. 1919.

WM. C. SPROUL.

No. 442.

AN ACT

Prohibiting advertisements relating to the treatment of diseases of the generative organs, and prescribing penalties.

Diseases of generative organs.

Advertisement of treatment.

Printing of advertisement.

Section 1. Be it enacted, &c., That it shall be unlawful for any person, copartnership, association, or corporation to advertise, in any manner whatsoever, representing such person, copartnership, association, or corporation as being engaged in the business or profession of treating diseases of the generative organs of either sex; and it shall be unlawful for any person, copartnership, association, or corporation operating a printing establishment to insert such advertisement in any publication issued by such printing establishment.

Section 2. Any individual, or the members or agents of any copartnership, association, or the officers or directors or agents of any corporation, violating the provisions of this act, shall be guilty of a misdemeanor, and, upon conviction, shall be sentenced to pay a fine not exceeding one thousand dollars, and to imprisonment for a period not exceeding one year.

Misdemeanor.

Penalty.

APPROVED—The 21st day of July, A. D. 1919.

WM. C. SPROUL.

No. 446.

AN ACT

To amend section one thousand four hundred and thirteen of an act, approved the eighteenth day of May, one thousand nine hundred and eleven (Pamphlet Laws, three hundred and nine), entitled "An act to establish a public school system in the Commonwealth of Pennsylvania, together with the provisions by which it shall be administered, and prescribing penalties for the violation thereof; providing revenue to establish and maintain the same, and the method of collecting such revenue; and repealing all laws, general, special, or local, or any parts thereof, that are or may be inconsistent therewith," by providing for the special education of certain children incapable of receiving proper education in the regular classes of the public schools.

Section 1. Be it enacted, &c., That section one thousand four hundred and thirteen of the act, approved the eighteenth day of May, one thousand nine hundred and eleven (Pamphlet Laws, three hundred and nine), entitled "An act to establish a public school system in the Commonwealth of Pennsylvania, together with the provisions by which it shall be administered, and prescribing penalties for the violation thereof; providing revenue to establish and maintain the same, and the method of collecting such revenue; and repealing all laws, general, special, or local, or any parts thereof, that are or may be inconsistent therewith," which reads as follows:—

Public school system.

"Section 1413. It shall be the duty of the county or district superintendent, attendance officer, or secretary of the board of school directors, in every school district in this Commonwealth, to report to the medical inspector of the school district every blind, deaf, or mentally deficient child in the district, between the ages of eight (8) and sixteen (16) years, who is not being properly educated and trained. The medical inspector of the school district shall examine such child, and report to the board of school directors whether it is a fit subject for education and training. If the child is reported to be a fit subject for education and training, but cannot be properly educated and trained in the public schools of the district, the board of school directors shall secure for it proper education and training: Provided, That

Section 1413, act of May 18, 1911 (P. L. 309), cited for amendment.

when it is necessary to educate or train such children outside of the public schools, their parents or guardians shall, if able to do so, pay to the district the expense necessarily incurred by it in educating and training the same: And provided further, That any child who is reported by the medical inspector of the school district not to be a fit subject for education and training shall be exempt from the provisions of this act," is hereby amended to read as follows:—

Defective children.

Report to medical inspector and superintendent.

Examination by medical inspector.

Report by medical inspector.

Plans for special classes or schools.

Provision and maintenance of special classes and schools.

Special training in other districts or special institutions.

Section 1413. It shall be the duty of the secretary of the school board, teachers, and attendance officers, in every school district in this Commonwealth, in accordance with rules of procedure prescribed by the Superintendent of Public Instruction, to secure information and report to the medical inspector of the school district and to the district or county superintendent of schools, on or before the fifteenth day of October of each year, every child within said district, between the ages of eight (8) and sixteen (16) years, who is gravely retarded in his or her school work, or who, because of apparent exceptional physical or mental condition, is not being properly educated and trained, and as soon thereafter as possible, the medical inspector shall examine such child, in accordance with rules of procedure prescribed by the Commissioner of Health, and report whether such child is a fit subject for special education and training. In school districts of the first, second, and third class, having a district superintendent of schools, said report shall be made to the superintendent of the district. In all other districts, the report shall be made to the Commissioner of Health, and by him reported to the superintendent of schools of the county.

The county or district superintendent of schools shall submit to the board or boards of school directors plans for establishing and maintaining special classes in the public schools or special public schools for the proper education and training of all such children reported to him as fit subjects for special education and training, and it shall be the duty of the board of directors of any district having such children to provide and maintain, or to jointly provide and maintain with neighboring districts, such special classes or schools: Provided, however, That if it is not feasible to form a special class with a minimum attendance of ten children in any district, or if for any other reason it is not feasible to provide such education for any such child in the public schools of the district, the board of school directors of that district shall, if the parents or guardians of said child give written consent, secure such proper education and training outside the public schools of the district, or in special institutions, on terms and conditions not inconsistent with the terms of this act or of any other act then in force applicable to such children.

School districts maintaining special classes in the public schools or special public schools or providing special education, as hereinbefore specified in this section, shall receive reimbursement, as hereinafter provided, so long as such classes, such schools, and such special education are approved by the State Board of Education as to location, constitution and size of classes, conditions of admission and discharge of pupils, equipment, courses of study, methods of instruction, and qualification of teachers.

Reimbursement of district.

The State Superintendent of Public Instruction shall superintend the organization of such classes and shall enforce the provisions of this act.

Supervision.

On or before the first day of October of each year, the president and secretary of each board of school directors shall report to the proper county or district superintendent the amount expended by the district in the preceding school year for instruction in such classes or such schools or for such instruction outside the public schools of the district. On or before the first day of November of each year, the said county or district superintendent shall make to the Superintendent of Public Instruction, on blanks to be furnished by him, tabulated returns by districts of the amounts so expended for instruction in special classes or special schools within the school district or in the provision of special instruction outside the public schools of the district. There shall be paid to each district by order on the State Treasurer, signed by the Superintendent of Public Instruction, from funds to be appropriated by the Legislature for the purpose, an amount equal to one-half the total expense incurred by said district for instruction in such special classes and special public schools and in the provision of such special instruction outside the public schools of the district.

Report by secretary of amount expended.

Report by superintendent of amount expended.

Payment of one-half by Superintendent of Public Instruction.

APPROVED—The 22nd day of July, A. D. 1919.

WM. C. SPROUL.

**Regulations of the Advisory Board of the Department of Health,
Commonwealth of Pennsylvania, fixing the maximum period of
incubation for certain diseases.**

Approved June 6, 1919.

The maximum period of incubation (between the time of exposure to the disease and the date when its development might be expected), of the diseases mentioned below shall be as follows:

Acute poliomyelitis (infantile paralysis)	14 days
Chicken pox	16 days
German Measles	14 days
Measles	14 days
Mumps	21 days
Scarlet fever	7 days
Smallpox	18 days
Diphtheria	5 days
Whooping cough	14 days
Typhoid fever	21 days

**Regulation of the Advisory Board of the Department of Health,
Commonwealth of Pennsylvania, authorizing the placarding
and quarantining of contacts of certain communicable diseases.**

Approved June 6, 1919.

Where persons are known to have been exposed to diphtheria, scarlet fever, or smallpox, health authorities may, when in their opinion it is necessary, placard and quarantine the premises, using the following form for the placard:

WARNING—SCARLET FEVER: (DIPHTHERIA; SMALLPOX)

An inmate of this house is known to have been exposed to scarlet fever (diphtheria, smallpox) and is required to remain on the premises until released by the health authorities.

**Regulation of the Advisory Board of the Department of Health,
Commonwealth of Pennsylvania concerning the method of disinfection to be followed after certain diseases.**

Approved June 6, 1919.

At the termination of the quarantine period or upon death or removal of a case of anterior poliomyelitis, German measles, glanders (farcy), measles, mumps, typhoid fever, paratyphoid fever and whooping cough disinfection shall be performed as follows:

The room or rooms occupied by the patient shall be subjected first to a mechanical cleansing followed by application of a solution of one to one thousand bichloride of mercury (corrosive sublimate) or a solution of two teaspoonsfuls of creolin to a gallon of water.

When the health officer establishes quarantine on a premises for any of the above mentioned diseases, he shall fully instruct the householder regarding the requirements to be observed by all persons under quarantine, and shall advise him of the date upon which quarantine may be raised if no further cases develop. He shall direct that when the quarantine period has expired the householder shall proceed to cleanse and disinfect the room or rooms occupied by the patient, according to the circular on sanitary cleaning which the health officer shall furnish to the householder.

At the termination of the legal quarantine period or upon death or removal of the patient the health officer shall visit the premises and if he finds that the sanitary cleaning has been accomplished as required, he shall remove the placard and terminate quarantine.

**Regulation of the Advisory Board of the Department of Health,
Commonwealth of Pennsylvania requiring private funerals for certain diseases in addition to those mentioned in Section 19,
Act of May 28, 1915.**

Approved June 6, 1919.

All services held in connection with the funeral of the body of any person who has died of measles, mumps, German measles, and whooping cough shall be private and the attendance thereat shall include only the immediate adult relatives of the deceased, who may at the time not be under absolute quarantine restrictions, and the necessary number of adult pallbearers; and any advertisement of such funeral shall state the cause of death.

The body of a person who has died of any such disease shall not be taken in any church, chapel, public hall or public building for the purpose of holding funeral services.

**Regulation of the Advisory Board of the Department of Health,
Commonwealth of Pennsylvania, to supplement Regulation
adopted by the Advisory Board and approved June 6th, 1919.**

Approved August 6, 1919.

All services held in connection with the funeral of the body of any person who has died of chicken pox shall be private and the attendance thereat shall include only the immediate adult relatives of the deceased, who may at the time not be under absolute quarantine restrictions, and the necessary number of adult pallbearers; and any advertisement of such funeral shall state the cause of death.

The body of a person who has died of chicken pox shall not be taken in any church, chapel, public hall or public building for the purpose of holding funeral services.

**Regulation of the Advisory Board of the Department of Health,
Commonwealth of Pennsylvania, Regarding Vaccination.**

Approved August 6, 1919.

INSPECTION AND CERTIFICATION. Eight to fifteen days after vaccination the vaccinating physician shall inspect the site and if a typical vesicle has appeared shall issue a certificate of successful vaccination. Under no other circumstances shall he issue such a certificate.

All certificates of successful vaccination shall be in the form prescribed by the Commissioner of Health and shall state that the vaccination site was thus inspected subsequent to vaccination and found to indicate successful vaccination. (Form 75.)

Certificates confirming previous successful vaccination as shown by a cicatrix or of previous smallpox as shown by cicatrix, may be issued by legally qualified physicians on forms prescribed by the Commissioner of Health. (Forms 76 and 77.)

TEMPORARY CERTIFICATES in reference to vaccination or non-vaccination shall be issued only by the County Medical Director, his authorized deputy or the Medical Officer of a borough or city Board of Health, each for his respective community.

UNSUCCESSFUL VACCINATIONS. When a school child has been twice unsuccessfully vaccinated within a period of three months he may be admitted to school after being again vaccinated, free of charge, by or in the presence of the County Medical Director, his authorized deputy or the medical officer of a borough or city Board of Health. A temporary certificate (Form 75-A) will be issued by said officer and it may be countersigned by the attending physician. Said certificate will admit the child to school for the current school year, only. If success results from this third vaccination, a regular certificate of successful vaccination shall be issued by the officer who issues the temporary certificate, after a typical vesicle or a typical cicatrix has appeared.

ALLEGED PHYSICAL UNFITNESS FOR VACCINATION. When the family physician claims that physical conditions contraindicating vaccination exist in the school child, the County Medical Director, his authorized deputy or the medical officer of a borough or city with an organized Board of Health shall examine the child resident therein and decide whether physical unfitness for vaccination exists. If possible, the said family physician shall be present at the examination. If vaccination is deemed inadvisable, a temporary certificate conspicuously marked "Good for current school year, only," and authorizing the admission of the child to school for this period shall be issued and signed by the said officer. This authorization will admit the child to school for but one year, after which he will be vaccinated or excluded from school.

LOST CERTIFICATE. The School Medical Examiner or the family physician may issue to any school child who has no certificate of vaccination but who has been successfully vaccinated a certificate upon Form 76, after examination and determination that a clearly defined vaccination scar exists. If sufficient evidence of previous smallpox exists he may similarly certify upon Form 77. Such certificate will be accepted by principals or teachers in lieu of a certificate of vaccination.

**Regulation of the Advisory Board of the Department of Health,
Commonwealth of Pennsylvania, Regarding Reporting by
Householders and Others of Cases of Communicable Disease.**

Approved August 6, 1919.

From and after the passage and promulgation of this regulation every householder or proprietor of a hotel or lodging house, having on his premises any person for whom no physician has been called and who shows an unusual skin eruption or rash or complains of a sore

throat and is too sick to work or play and has spasms of violent coughing, shall report these facts immediately to the health officer of the city, borough or township, giving the name of the person and the location of said premises.

**Regulation of the Advisory Board of the Department of Health,
Commonwealth of Pennsylvania, Regarding the Classification of
Venereal Diseases and the Procedure Incident Thereto.**

Approved August 6, 1919.

From and after the passage and promulgation of this regulation, gonorrhea, and syphilis in its primary and secondary stages and chancroid are declared transmissible diseases subject to quarantine when in the opinion of the attending physician or the county medical representative of the State Department of Health, the character, occupation, habits or neglect of treatment and method to protect others, make those infected menaces to public health.

**Regulation of the Advisory Board of the Department of Health,
Commonwealth of Pennsylvania, Regarding the Rental or Tem-
porary Furnishing of Certain Articles to be used at Funerals in
Private Houses.**

Approved August 6, 1919.

From and after the promulgation of this regulation no undertaker, or person or persons acting in the capacity of undertaker, or funeral director, or any other person, shall rent or temporarily furnish for use at a funeral in any private house, any carpet, rug, drapery, clothing or artificial flowers.

INTERPRETATION

Harrisburg, Pa., December 3, 1919.

MEMORANDUM:—

The regulation of the Advisory Board of the Department of Health of Pennsylvania, approved August 6th, 1919, concerning the Rental or Temporary Furnishing of Certain Articles to be Used at Funerals in Private Houses should be interpreted literally. This regulation did not contemplate the prohibition of use by undertakers of any of the usual paraphernalia or equipment necessary to prepare and lay out the bodies of the dead.

It will be noted that the regulation prohibits the renting or temporary furnishing for use at a *funeral* of any carpets, rugs, draperies, clothing or *artificial* flowers. By carpets and rugs are meant floor coverings. By draperies is meant room hangings, such as window or door curtains. By clothing is meant garments intended for wear by relatives or others. It does not refer to any garments used in preparing or dressing a corpse for burial which are to be buried with the corpse.

All undertakers are responsible for the proper washing, cleansing and disinfecting after use of such articles of their equipment as come in contact with dead bodies.

By Direction of the Commissioner of Health.

REGULATION of the Advisory Board of the Department of Health of the Commonwealth of Pennsylvania, Regarding Whooping Cough Quarantine.

Approved October 14, 1919.

From and after the passage and promulgation of this regulation, when a premises is quarantined for whooping cough, wage-earners and adult members of the household may be given quarantine permits with the usual restrictions. Children of the household who are known to have had whooping cough may be permitted by the Health Authorities to continue school attendance during the quarantine period.

REGULATION of the Advisory Board of the Department of Health of the Commonwealth of Pennsylvania, Regarding Quarantine of Carriers of Diphtheria Bacilli, Cholera Bacilli, Dysentery Bacilli, Typhoid Bacilli and Para Typhoid Bacilli.

Approved October 14, 1919.

From and after the passage and promulgation of this regulation, persons known to be carriers of the following pathogenic organisms namely,

Diphtheria bacilli, cholera baccilli, dysentery bacilli, typhoid bacilli and para typhoid bacilli, and who in the opinion of the designated representatives of the Commissioner of Health are menacing to the public health, by reason of their character, occupation, habits or neglect of treatment and of the methods designed to protect others from infection, may be placed under quarantine, either complete or modified, until such time as they cease to be carriers, as determined in the Department of Health Laboratories, or until released by order of the Commissioner of Health.

REGULATION of the Advisory Board of the Department of Health of the Commonwealth of Pennsylvania Regarding Quarantine in Certain Cases of Pulmonary Tuberculosis.

Approved October 14, 1919.

From and after the passage and promulgation of this regulation, pulmonary tuberculosis is declared to be transmissible and subject to quarantine in such cases of the disease, as in the opinion of the attending physician or the county medical representatives of the State Department of Health or other designated physician representing the Commissioner of Health are menacing to the public health, by reason of the patient's character, occupation and habits or his neglect of treatment and the methods designed to protect others from infection.

REGULATION of the Department of Health Passed by the Advisory Board, Relating to Quarantine Isolation and Disinfection in the Several Communicable Diseases.

Approved December 20, 1919.

In addition to the regulations of the Department of Health heretofore passed and promulgated by the Advisory Board, relating to quarantine, isolation and disinfection in the several communicable diseases, it is hereby ordered and decreed that quarantine in the case of communicable diseases covers not only the protection of the citizens of the Commonwealth against such communicable diseases, but the means by which such protection may be secured and the quarantine enforced, and it is now, therefore, declared that such quarantine may be secured and enforced in the following manners, to-wit:

First: By isolation of the patient in his own home, with his own family.

Second: By isolation of the patient in his own home, separate and apart from the other members of his immediate family.

Third: By removal of the patient by order of the Commissioner of Health from his own home to a place in the State provided for the care and treatment of such communicable disease or diseases.

Every person who violates any order of the Commissioner of Health made in accordance with this regulation, or fails or refuses, or neglects to comply with such order of the Commissioner, shall be deemed to be guilty of a violation of the Act approved the twenty-seventh day of April, A. D. 1905, P. L. 312, by the provisions of which this regulation is passed and promulgated.



574, 1919

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Bulletin 104

February, 1920

Department of Health

PENNSYLVANIA

INSTRUCTION CAMP

OF

1919

Entered as second class matter, August 9, 1900, at the post-office at Harrisburg, Pa.,
under the Act of July 16, 1894.

Department of Health

PENNSYLVANIA

INSTRUCTION CAMP

OF

1919

HARRISBURG, PA.:
J. L. L. KUHN, PRINTER TO THE COMMONWEALTH
1920.



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PERSONNEL OF THE DEPARTMENT OF HEALTH OF PENNSYLVANIA.

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Assistant to Executive Secretary.—Edna Hosler, Harrisburg.

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Division of School Hygiene.—George K. Strode, M. D., Chief of Division, Harrisburg.

Division of Laboratories.—John L. Laird, M. D., Chief of Laboratories, Philadelphia.

Division of Sanatoria.—F. C. Johnson,* M. D., Medical Director, State Sanatorium for Tuberculosis, Mont Alto; W. G. Turnbull, M. D., Medical Director, State Sanatorium for Tuberculosis, Cresson; T. H. A. Stites, M. D., Medical Director, State Sanatorium for Tuberculosis, Hamburg.

Division of Tuberculosis Dispensaries.—Karl Schäffle, M. D., Chief Medical Inspector, Harrisburg.

Division of Genito-Urinary Dispensaries.—S. Leon Gans, M. D., Chief of Division, Harrisburg.

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Engineering Division.—C. A. Emerson, Jr., Chief Engineer, Harrisburg, includes Bureau of Housing, John Molitor, Chief of Bureau, Harrisburg.

Bureau of Vital Statistics.—Wilmer R. Batt, M. D., State Registrar, Harrisburg.

Division of Accounts.—C. T. Williams, Harrisburg.

Division of Child Hygiene.—Dorothy Child, M. D., Chief of Division, Harrisburg.

Bureau of Drug Control.—Thomas S. Blair, M. D., Chief of Bureau, Harrisburg.

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Division of Public Health Education.—Wm. C. Miller, M. D., Chief of Division, Harrisburg.

Division of Purchasing.—Chas. H. Clappier, Jr., Chief of Division, Harrisburg.

*Resigned and succeeded by T. L. Hazlett, M. D.

The force of the Central Office (Harrisburg), official and clerical, consists of 292 men and women.

The Field Force of the Department throughout the State consists of the sanatoria attachés, Public Health Nurses, County Medical Directors, Dispensary Chiefs and Assistants, Local Registrars and Township Health Officers.

Local Boards of Health (city, borough and township), are not part of the State Health Department but they collaborate with the department and their officials are charged by law with the local enforcement of the State health laws in their own communities, as well as the local health ordinances.

The total personnel of the State Health Department, full time and part time employes, numbers about 6,000. With the exception of the local Registrars, who are paid from other funds, all these officials and employees are paid by the State Health Department.

The total appropriations for the maintenance of the Department for the two years ending June 30, 1921, amount to \$5,364,128.00.

PENNSYLVANIA

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Edited by T. W. JACKSON, M. D.

PENNSYLVANIA'S CAMP OF INSTRUCTION IN-PUBLIC HEALTH IN JUNE AND JULY, 1919.

The occasion for the publication of this bulletin is the successful completion of the first instruction camp of the Department of Health of the State of Pennsylvania.

The idea of instruction camps is not a new one and outdoor summer-schools varying from military camps to assemblies for popular literary and scientific study, or camps for collegiate summer courses, have long been carried out, but it is believed that the Mont Alto Instruction Camp of 1919 represents an interesting departure in public health extension and instruction to state health officials and agents.

The story of this camp and much of the instruction there presented will be found in the following pages.

No reports of the laboratory work or the section work by classes of doctors and nurses in the hospital, are recorded but some very excellent work under trained instructors was done in the daily ward and laboratory classes.

During the first camp period, in particular, the stenographic reports of addresses and conferences were not complete and in consequence certain valuable papers and discussions do not appear in these pages.

It is particularly regretted that the addresses of some of our visitors were not adequately reported for publication. Inability to print these valuable contributions works a distinct loss to the Department and to those who read this report.

The editorial aim in assembling these papers has not been that of literary excellence, or even smooth and grammatical diction, but rather the plain presentation,—unembellished,—of practical teachings and suggestions from men and women who are alive to both opportunity and obligation in state health work and are earnestly working with the methods and machinery at hand in Pennsylvania.

The betterment of methods was the constant and uppermost thought of all and numerous recommendations made in conference have al-

ready been put in effect. Among the suggested changes already carried out are the creation of new County Advisory Councils and increased administrative scope of county medical officers, hereafter to be known as County Medical Directors instead of Inspectors.

State Health Department Nurses will hereafter cover a much larger field of work and will be known as the State Public Health Nurses. During the camp they received practical work in medical and sanitary surveys and in classes made complete surveys of the sanatorium patients, buildings, grounds, dispensary, kitchens, diet kitchens, wards and records at Mont Alto, rendering reports, criticisms and suggestions and undergoing a comprehensive examination.

In February of the present year, Col. Edward Martin, Commissioner of Health, suggested a training camp for County Medical Inspectors and appointed Dr. Howard L. Hull, Chief Medical Inspector of the Department, Commanding Officer of the Camp, directing him to form plans and to appoint a staff to carry them out. Later it was decided to have Dispensary Chiefs and Department nurses attend the camp also.

The following staff was appointed: Karl Schäffle, M. D., Director of Dispensaries, Camp Adjutant; Capt. R. E. Irwin, Assistant Engineer, Quartermaster; Lt. G. D. Andrews, Assistant Engineer, Song Leader and Director of all out-door sports; Major Wm. C. Miller, M. D., Chief of Division of Public Health Education, Director of indoor entertainments. The Commission and Deputy Commissioner were considered as supervisors and advisors and Miss Alice O'Halloran, Chief Nurse, and her assistant, Miss Margaret C. Parsons were placed in command of the nurses.

In March the Commanding Officer, Adjutant and Quartermaster visited Mont Alto, selected a site for the camp, facing the Administration Building, and made arrangements for the messing of all persons in the staff dining-rooms. National Guard tentage with mattresses, cots and blankets were secured by arrangement with the Adjutant General of Pennsylvania, while bed-linen and towels were supplied from the stores of the Health Department.

The camp was staked out in the latter part of March, tent locations and company streets being indicated. The arrangement of drinking fountains, bath-houses and latrines, as well as electric lighting, warehouse tents and police arrangements were fully completed before the opening of the first camp.

Much praise is due to Captain Irwin, Quartermaster, for his energetic work in handling of details of supply and transportation and to Dr. Fred C. Johnson, Director of the Mont Alto Sanatorium, for his co-operation and assistance.

A curriculum outline was prepared at an early date; the object being to arrange a course applicable alike to physicians and nurses and to provide opportunity for section work, so that small groups might receive the advantages of practical personal instructions.

All of the Divisional Chiefs of the Department were utilized as instructors. Notices of dates and time of arrival at Mont Alto Station with a list of needful things to be furnished by the individual were sent to all persons expected to be present at the camp. Upon arrival at Mont Alto Station they were furnished with transportation, provided by the Quartermaster, to the camp upon the mountain top, five

miles distant. All persons were promptly assigned to tents. A few simple rules for the conduct of the camp were posted on the bulletin board together with a schedule of daily instruction and demonstrations. Each person kept his own tent in order and did his part in keeping the grounds in proper condition.

Instruction periods were announced by bugle call and lasted for fifty-five minutes. They were terminated by bugle recall. The conduct of the camp was along military lines with morning reveille; and taps at 10.30 p. m. At retreat the doctors and nurses assembled in formation and remained at attention during the lowering of the National colors. Lectures and addresses were given in two large assembly tents resembling circus tents. These tents were equipped with a drinking fountain, moving picture apparatus, electric lighting, platform with blackboard, oil cooking stove for demonstration purposes in domestic science and folding chairs.

In order to prevent interruption of health activities throughout the State on the part of County Medical Inspectors and Dispensary Chiefs and nurses, it was decided to assemble the forces in camp during different periods. The camp was arranged to continue for one month and the course was divided into two consecutive periods of approximately two weeks each, half of the physicians and nurses attending at one time. In this way the continuity of work of the Department was maintained; the Medical Inspectors of adjacent counties taking over the work of their neighbors, for the time being.

These time divisions are referred to in this report as the first and second camps respectively, the first camp continuing from June 23d to July 2nd and the second camp lasting from July 7th to July 18th. The second camp was in most respects a repetition of the first and a narrative account of the first camp gives a fair idea of the second one.

Complete lists of those in attendance at both camp periods are appended, however, and the daily program is reproduced in full. Stenographic notes of all papers and discussions were taken but the volume of this material makes it impossible to reproduce in full the papers presented and the discussions indulged in. Abstracts have, therefore, been prepared and these abstract reports will be found following the narrative account of the camp. Duplication of subjects has been avoided as much as possible.

It was generally acknowledged that Col. Martin had put over a big idea in a big way and all in attendance, at both camps, left for their homes filled with enthusiasm. It is expected that as a result of this camp there will hereafter be much closer coöperation and a degree of fellowship hitherto unknown among the members of the Department.

Throughout the course of the camp those in attendance were urged to offer suggestions and especially constructive criticisms whereby the service might be improved. As a result of this freedom of expression many valuable suggestions were offered from numerous sources. It was the general consensus of feeling that every man or woman who attended the camp returned to his or her part of the State stimulated to attack the various Department problems and prepared to make valuable recommendations concerning things to be done to improve local conditions. One enthusiastic attendant stated that the camp was a vacation with a liberal education in public health work. Press correspondents who attended the camp rendered splen-

did support and the co-operation and publicity accorded to the Department were heartily appreciated.

Narrative account of the first camp period. At the first camp there were twenty-nine persons from the central office at Harrisburg, twenty-five County Medical Inspectors, twenty-three Dispensary Physicians, two Health Officers, eighty-seven Nurses, seventeen visitors and five press correspondents, making a total of one hundred and eighty-eight (188). The schedule of bugle calls was as follows:

- 6:25 a. m.—First call.
- 6:30 a. m.—Reveille.
- 6:45 a. m.—Assembly for setting up exercises.
- 7:00 a. m.—Recall.
- 7:30 a. m.—Breakfast.
- 8:00 a. m.—Policing of grounds and inspection.
- 8:25 a. m.—School call.

Between the instruction periods chorus singing was directed by Lt. G. Douglas Andrews, with Mrs. Andrews at the piano. Song sheets were distributed to all and some excellent choral results were attained. During the camp several distinguished visitors made addresses upon various subjects. Their names will appear in the course of the program and in some instances their addresses have been abstracted and reproduced in the later pages of this report.

On Monday, June 23d, the first day of the camp, the Commissioner, Colonel Martin outlined the policy of the Department in his opening address. He laid special emphasis upon the importance of the position of the County Medical Inspector, stating that he believed this office should be the first and highest in each county and therefore that the County Medical Inspector should be primarily responsible for everything conducted in his county relating to public health work. It was pointed out that this would greatly enlarge his duties, requiring him not only to receive reports from health officers but from nurses and dispensary physicians.

He then pointed out various special problems and referred to the house fly nuisance; stating that it was something that existed solely because active coöperative work had not been undertaken to eradicate it. He believes that our aim should be to attack public health problems as a team and to continue the attack until the proper end is reached. He asked that each county inspector name certain prominent individuals,—not less than five,—the majority to be physicians,—to act as an advisory council in his county and that this council be consulted on all matters involving a change in the policy of the county and in all matters for the betterment of the general welfare of the health of the people. The council is likewise to be consulted regarding any appointments to be made.

He emphasized the importance of every individual reporting to the central office the existence of conditions prejudicial to the public health noted in his work throughout his county. Constructive criticisms and suggestions for improving the work of the Department were invited.

Following the Commissioner's remarks, Dr. H. L. Hull, Chief Medical Inspector, briefly reviewed the laws under which the Department operates and was subjected to numerous questions. Following this he discussed the duties of the County Medical Inspectors.

During the morning the nurses listened to a lecture by Mrs. Bessie Haasis of New York City on Public Health Nursing. In the afternoon Mr. Chas. A. Emerson, Chief Engineer, reviewed the work of the Engineering Division and reviewed its correlation with other Divisions.

Lt. Col. J. D. McLean, Deputy Commissioner, then discussed the tuberculosis campaign and outlined the plans of the Department in this connection. His lecture emphasized the belief that advanced cases of tuberculosis should not be sent to the sanatoria but that the final objective in the use of the State Sanatoria was to make them institutions for children or for early cases of tuberculosis.

At three o'clock section work on tuberculosis was carried out in the hospital and in the dispensary, the nurses having section work at this time on tuberculosis nursing.

In the evening Dr. Thomas Blair, Chief of Bureau of Drug Control, talked on the subject of the anti-narcotic laws and their inauguration and operation.

Following this lecture moving pictures were shown,—one illustrating the diagnosis of tuberculosis as conducted in the Army Medical School. This was followed by comedy pictures.

On June 24th, the second day, setting up exercises opened the day's work. The entire morning was occupied by Dr. John L. Laird, Chief of Laboratories, in discussing the proper methods of preparing and forwarding specimens, laboratory diagnostic methods and laboratory therapeutic methods.

During the morning Miss Fisher lectured on Home Economics to the nurses.

The afternoon program for the nurses, consisted of lectures on Social Service by Miss Cannon, followed by lectures and demonstrations on Home Economics by Miss Fisher and Miss Truitt.

For the physicians the work consisted of a discussion of venereal disease control by Major S. Leon Gans, Chief of Genito-Urinary Dispensaries. A general discussion followed. The rest of the afternoon was spent in a conference upon various questions concerning the duties of County Medical Inspectors and the various laws concerning public health.

In the evening Lt. Col. T. W. Jackson, Assistant to the Commissioner, lectured on Leprosy and at the close of the lecture answered a number of questions propounded to him.

On Wednesday morning, June 25th, Mr. John Molitor, Chief of the Housing Bureau, explained housing laws and showed a number of lantern slides on housing conditions.

Mr. Ness discussed the question of nuisances and the laws governing their abatement.

Mr. Roy Miller, Chief of the Division of Supplies and Distribution of Biological Products spoke upon the operations of this division.

Following this there was a short discussion by Dr. Schäffle, Miss O'Halloran and Dr. Hull on reports to be rendered to the central office.

In the afternoon Mrs. Martha Magee lectured on the subject of Social Service. Later Mr. Emerson discussed the control of typhoid fever, emphasizing the importance of the work of the Engineering Division. Following this there was optional section work, offered in the laboratory and in the sanatorium.

In the evening Dr. Karl Schäffle, Chief Medical Inspector of Dispensaries, spoke briefly on tuberculosis. He was followed by Dr. Wilmer Batt, State Registrar of Vital Statistics, who showed lantern slide pictures of certain reports received at the central office in Harrisburg and discussed vital statistics. In conclusion there were the usual evening moving pictures.

The program for the nurses on Wednesday, June 25th, was the same as that for the doctors except for section work and a lecture on Home Economics with practical demonstrations, by Miss Fisher and Miss Truitt.

On Thursday, June 26th, Major S. Leon Gans, Chief of Division of Genito-Urinary Dispensaries, was first on the day's program, discussing the diagnosis and treatment of gonorrhea. This lecture was attended by both nurses and doctors.

Dr. J. L. Laird, Chief of Laboratories and Dr. H. L. Hull, Chief Medical Inspector, talked on the epidemiology of the various contagious diseases, Dr. Laird covering the laboratory side of the subject.

In the afternoon Dr. Frank Watson lectured on Social Service to the entire assembly. The remainder of the afternoon was devoted to section work in tuberculosis wards and in the laboratory.

In the evening Dr. Thos. McCrea, Professor of Medicine at Jefferson Medical College, Philadelphia, lectured on Conditions of the Chest other than Tuberculosis. This most excellent lecture illustrated by stereopticon pictures was followed by considerable discussion. After this the moving picture "The End of the Road" was shown.

The day's program for the nurses was varied by morning lectures by Dr. Frank Watson and Miss Elizabeth Wood on Social Service and in the afternoon by a lecture on Home Economics by Miss Truitt.

There was also a lecture by Professor N. J. Melville on the Intelligence Test as applied to School Children. In the evening the nurses attended the lecture given by Dr. Thos. McCrea.

Friday, June 27th, was a day of section work throughout the camp. To the physicians Mr. C. A. Emerson, Chief Engineer, spoke on the subject of Water (public and private supplies) and methods of water purification.

Mr. W. L. Stevenson, Assistant Chief Engineer, then discussed the subject of sewage and its treatment and disposal. Both of these lectures provoked a great deal of discussion. Following the paper Mr. C. A. Emerson discussed the proper disposal of garbage in cities, small towns and rural districts.

During this time the dispensary physicians were attending a clinic given at the hospital by Dr. Thomas McCrea, where they were joined by the County Medical Inspectors after the lectures just mentioned. It was arranged to devote the entire afternoon to section work, allowing the physicians to elect the work they chose to follow. The following work was available for selection: Tuberculosis work, at the hospital or intelligence tests by Prof. Melville; laboratory work, demonstration of Wassermann tests.

In the evening Prof. Melville gave a general lecture on the intelligence tests. This was followed by motion pictures.

Lt. Col. A. P. Francine, briefly described the effects on human beings of poison gases during the war, especially those of mustard gas.

Saturday, June 28, the program consisted of Section Hygiene work by Prof. Melville; Section Tuberculosis work by Dr. Schaffle; Section Laboratory work by Dr. Wenner, Bacteriologist.

The program for the nurses consisted of a talk on follow-up work by Dr. Schaffle.

At noon on Saturday all educational work was interrupted for the week and the afternoon was given up to athletic sports. In the evening a most enjoyable masquerade ball was held.

On Sunday there was no scheduled work and a number of automobile parties were formed to visit Gettysburg battle field and Pen-Mar Park.

On Monday morning, June 30th, the intensive training was resumed, the day being devoted almost entirely to the discussion of School Inspection and Communicable Diseases. The program for the Physicians included the following addresses: Capt. G. K. Strode, School Hygiene; Dr. Klopp, Mental Hygiene from a Psychiatrist's Standpoint. Then followed a clinic conducted by Dr. Klopp and Prof. Melville at which several cases of representative mental deficiency were shown.

The clinic was followed by a talk by Dr. Chas. Schaffer, Assistant City Diagnostician of Philadelphia, who spoke briefly on the control of communicable diseases in schools. Demonstrations of the Schick test were made upon volunteers. In the afternoon, Mr. John Ziegler, of the School Inspection Division, spoke on the subject of School Sanitation and Reports from School Medical Inspectors. The rest of the afternoon was spent in the laboratory and in tuberculosis work.

In the evening Dr. A. A. Cairns and Dr. Ostheimer, both of the City Health Department of Philadelphia, spoke on the subjects of Smallpox and Scarlet Fever Control. These lectures were illustrated by lantern slides and followed by popular moving pictures.

The program for the nurses was the same, except that in the morning Dr. Dorothy Child spoke on the subject of Child Welfare and in the afternoon Miss Fisher and Miss Truitt spoke on subjects of Home Economics.

On Tuesday, July 1, the day's work started with a group intelligence test by Prof. Melville. Two periods of twenty minutes each were devoted to answering the questions supplied on printed forms. From this a rating was made of every person examined.

The rest of the morning was devoted to section work in the bacteriologic laboratory under the direction of Dr. J. L. Laird, Dr. T. W. Jackson and Dr. D. Rivas. Demonstrations of pathogenic bacteria and parasites of various exotic diseases were made to groups of twenty physicians. Gross and microscopic specimens were shown.

In the afternoon Hon. B. J. Myers, Deputy Attorney General of Pennsylvania, spoke on the subject of Legal Problems in Health Work, and answered many questions propounded. Dr. H. L. Hull also spoke for a short time on the subject of local Boards of Health and the Methods of Conducting Their Work. This was followed by a most interesting lecture by Miss Fisher on Home Economics.

The day's program for the nurses was the same as for the physicians, except that in the morning following the intelligence test, there was a demonstration by Miss Fisher and Miss Truitt relating to Home Economics. There was a further demonstration in Home Economics in the afternoon.

In the evening there was an address upon Publicity, by Mr. James McCoy, Executive Secretary.

The Commissioner then expressed his deep appreciation of the co-operation shown by all attending the camp and his pleasure at its success, which he believed to be due to the good spirit universally shown. He outlined a few additional policies of the department, speaking on the importance of taking over the various Board of Health problems in each community and consulting with the local authorities on general health problems.

He believed that one of the best public aids to good health was the use of pasteurized milk, it being the only safe way of protecting the public against infection. He made the statement that the providing of pure milk and pure water supplies would solve the typhoid problem.

Following this, all cares were cast aside and short speeches were made by various members of the staff, expressing appreciation of the work done. Later a wonderfully successful burlesque performance was carried out and various effective impersonations were presented. The performance ended with an autopsy upon the body of one John Barleycorn by Major Wm. C. Miller, who, after finding many possible minor causes for his death, finally demonstrated an obstruction from a foreign body which proved to be a quart bottle of "Wilson-Thats-All." The autopsy was followed by the moving picture film, "Fit to Win."

On Wednesday, July 2, Major W. G. Turnbull, Medical Director of the Cresson Sanatorium, conducted a tuberculosis clinic in the morning. This was followed by a half hour talk by Dr. Dorothy Child. Dr. H. L. Hull spoke briefly on the matter of handling epidemics. Miss Fisher then addressed the physicians on Home Economics.

For the nurses the first talk of the day by Miss Alice O'Halloran, Chief Nurse, was followed by one by Lt. Col. J. D. McLean. Dr. Hull then spoke on the relation of the Department Nurses to the Division of Medical Inspection. This was followed by a talk by Dr. Child at the laboratory. The last hour of the morning was occupied by Prof. Melville.

The camp broke up on July 2d to permit the doctors and nurses from distant parts of the State to reach their homes before Independence Day, July Fourth.

The weather throughout both camp periods, while somewhat variable, was on the whole, very pleasant. Owing to its altitude, clouds of mist sometimes enveloped the camp and on a few occasions the nights were sufficiently cold to call for all the blankets obtainable. Most days, however, were sunny and extremely pleasant, the occasional thunder storms serving to provide variety and add to the interest of life.

No epidemic sickness prevailed at any time and the health record of the camp was first-class.

SECOND CAMP. At the beginning of the second camp period which opened on Monday, July 7th, a change in the official personnel was announced, whereby Dr. Karl Schäffle became Commanding Officer and Dr. H. L. Hull became Camp Adjutant, this being a mutual exchange of offices and duties.

The second camp, lasting until July 18th, was slightly longer than the first one, but was conducted along similar lines of activity, pro-

professional, physical and social. The personnel, so far as attendance was concerned, was entirely changed; a new group of County Medical Inspectors, Dispensary Physicians and Nurses taking the place of the first group.

The program was not designed to be an exact repetition of the first camp program but instructions in certain fundamental subjects was necessarily repeated, and the instructors from the central office in Harrisburg remained the same. Visiting speakers from New York, Washington, Baltimore, Philadelphia and from other Departments at the State Capitol at Harrisburg contributed interesting and valuable papers and lent variety to the program.

The principal athletic activities, in addition to the daily setting-up exercises, were baseball, basketball, volley ball, quoits, mountain walks and tennis. A tennis tournament was held and several baseball games were staged.

A particularly enjoyable entertainment was provided through the courtesy of Hon. Thomas B. Donaldson, State Commissioner of Insurance, Harrisburg, who brought as entertainers to Mont Alto, Mrs. W. F. Harris, soprano, Mr. Gwilym Watkins, baritone, Miss Speakman, elocutionist, and the Capital City Quartet of male voices, on July 15th. Mr. Donaldson was inimitable in his monologues and the entire evening's entertainment was thoroughly enjoyable.

An interesting and creditable juvenile entertainment provided by the children of the Mont Alto Sanatorium and consisting of singing, recitations and impersonations, was also given during the second camp and a contribution of \$169.95 was made by the members of the camp for the benefit of the children. An additional check of \$100.00 was presented to them by one of the County Medical Inspectors.

The entertainment of the last night, July 17, "Our Own Show" was worthy of more extended notice than the present reference. It will long be remembered as an agreeable closing of a most satisfying and successful instruction camp. Daily motion pictures and occasional dancing had their place in the entertainment scheme.

A consecutive account of the program numbers, day by day, will not be given for the second camp period, as many of the papers presented are given in abstract in this report. The program, however, is given in detail immediately following the program of the first camp. The personnel lists of doctors, nurses and visitors of both camps have been combined.

CAMP OF INSTRUCTION, 1919.

First Period, June 23d to July 2nd. Second Period, July 7th to 18th.

Daily Bugle Calls.

6:25 A. M. First Call.
 6:30 A. M. Reveille.
 6:45 A. M. Assembly setting-up exercises.
 7:00 A. M. Recall.
 7:30 A. M. Breakfast.
 8:00 A. M. Policing of grounds and inspection.
 8:25 A. M. School Call.
 9:25 A. M. Recall.
 10:25 A. M. Recall.
 11:25 A. M. Recall.
 12:00 M. Mess Call—Lunch.
 12:55 P. M. School Call.
 1:55 P. M. Recall.
 2:55 P. M. Recall.
 5:30 P. M. Mess Call—Dinner.
 7:00 P. M. School Call.
 10:30 P. M. Taps—Lights Out. No talking after taps.

PROGRAM OF ADDRESSES, CONFERENCES, SYMPOSIA, LANTERN DEMONSTRATIONS, ENTERTAINMENTS AND CLINICS.

June 23d.—Address—Administration Policy of Health Department, Colonel Edward Martin, Commissioner.
 Quiz—Conference on Laws and Regulations under which the Department Operates, Law relating to Local Boards of Health, Dr. H. L. Hull, Chief Medical Inspector.
 Public Health Nursing—(Nurses), Mrs. Bessie Haasis, New York.
 The Engineering Division, its Correlation with other Division—C. A. Emerson, Jr., Chief Engineer.
 The Tuberculosis Campaign—Colonel John D. McLean, Deputy Commissioner.
 Section Work in Tuberculosis or Laboratory work for County Medical Inspectors and Dispensary Physicians.
 Section Work for nurses—Various subjects.
 Recreation.
 Antinarcotic Laws; their inauguration and operation—Dr. Thos. S. Blair, Chief, Bureau of Drug Control.
 Recreation and motion pictures.

June 24th.—The State Laboratory—Method of preparing and forwarding Specimens (Physicians and Nurses). Dr. John L. Laird, Chief of Laboratories.
Diagnostic Methods—Dr. John L. Laird, Chief of Laboratories.
Laboratory Therapeutic Methods (Physicians)—Dr. John L. Laird, Chief of Laboratories.
Introduction to Home Economics (Nurses)—Miss Fisher, State College, Pa. and Miss Truitt, Mont Alto.
Social Service (Nurses)—Miss Antoinette Cannon, Philadelphia.
Symposium by Drs. Martin, McLean, Laird, Gans, Schäffle, et al. on Clinical and Laboratory Methods of Diagnosing Tuberculosis, Syphilis, Typhoid Fever, Diphtheria, Streptococcic Throat Conditions, Pneumonia, and Gonorrhea.
Lecture and demonstration on Home Economics (Nurses)—Miss Fisher and Miss Truitt.
Sections—Tuberculosis and Laboratory Work (Physicians).
Recreation.
Leprosy—(Physicians and Nurses)—Lt. Col. Thomas W. Jackson, Assistant to the Commissioner.

June 25th.—Housing Laws—Technique—Survey—Mr. John Molitor, Chief, Bureau of Housing, Engineering Division.
Nuisances—Laws governing their abatement—Mr. D. V. Ness, Chief, Subdivision of Public Service, Engineering Division.
The Division of Supplies (including antitoxin and vaccines)—Roy G. Miller, Chief of Division of Supplies and Biological Products.
Reports to be rendered to Central Office—Dr. H. L. Hull, Chief Medical Inspector; Dr. Karl Schaffle, Chief Medical Inspector, Dispensaries; Miss Alice O'Halloran, Chief Nurse.
Open Discussion (Physicians).
Social Service (Nurses)—Miss Antoinette Cannon, Philadelphia.
Social Service—Mrs. Martha Magee, Philadelphia.
Typhoid Control—C. A. Emerson, Jr., Chief Engineer.
Section Work—Tuberculosis and Laboratory (Physicians).
Home Economics—Miss Fisher and Miss Truitt.
Vital Statistics—Dr. Wilmer R. Batt, State Registrar.
Tuberculosis Control—Dr. Karl Schaffle, Chief Medical Inspector of Dispensaries.

June 26th.—Diagnosis and treatment of Gonorrhea—Major S. Leon Gans, Chief, Division of G-U Dispensaries.
Social Service (Nurses)—Dr. Frank Watson and Miss Elizabeth Wood.
Exanthemata Control (Physicians)—Dr. J. L. Laird, Chief of Laboratories; Dr. H. L. Hull, Chief Medical Inspector.

Social Service (Physicians)—Dr. Frank Watson, Philadelphia.

Home Economics (Nurses)—Miss Fisher and Miss Truitt.

Mental Hygiene—Professor Norbert J. Melville.

Diseases of the Chest other than Tuberculosis—Dr. Thomas McCrae, Philadelphia, Professor of Medicine, Jefferson Medical College.

June 27th.—**Paratyphoid Fever (Physicians)**—Dr. Thomas McCrae, Philadelphia.

Water—Mr. C. A. Emerson, Jr., Chief Engineer.

Sewage—Mr. W. L. Stevenson Assistant Chief Engineer.

Section Work in Tuberculosis (Physicians).

Home Economics (Nurses)—Miss Fisher, State College, Pa.

Mental Hygiene (Nurses)—Professor Norbert J. Melville, Philadelphia.

Disposition of Garbage—Mr. C. A. Emerson, Jr., Chief Engineer.

Section Work—Professor Melville.

The Effects of Gassing in Warfare—Lt. Col. A. D. Francine, Philadelphia.

A Little Magic and Moving Pictures.

June 28th.—**Section Work**—The following Section Work is offered: (Physicians), Psychology tests, Professor Melville; Tuberculosis work, Dr. Karl Schäffle, Laboratory work, practical demonstrations; Quick Water Analysis, J. J. Wenner, Assistant State Laboratory, Philadelphia.

Follow-up Work (Nurses)—Dr. Karl Schäffle, Chief Medical Inspector of Dispensaries.

Section work in Mental Hygiene, Sections A and B (Nurses)—Professor Melville.

After 12 o'clock noon students may leave camp or work in the laboratory.

June 30th.—**School Hygiene**—Captain George K. Strode, Chief, Division of School Medical Inspection.

Mental Hygiene from a Psychiatrist's Standpoint—Dr. Klopp, Rittersville.

Mental Hygiene from a Psychologists Standpoint (Physicians)—Professor Melville.

Children (Nurses)—Dr. Dorothy Child, Chief, Division of Child Hygiene.

Mental Hygiene Clinic—Dr. Klopp and Professor Melville (Physicians).

Control of Communicable Diseases in Schools—Dr. C. W. Schaeffer, Philadelphia.

Tonsillectomies and Adenoidectomies—Dr. Charles Rebeck, Harrisburg.

Children (Nurses)—Dr. Maurice Ostheimer, Philadelphia.

School Sanitation and Reports—Mr. John Ziegler, Sanitary Supervisor, Division of School Medical Inspection.

Home Economics (Nurses)—Miss Fisher and Miss Truitt.

Section Work in School Inspection (Physicians).

Mental Hygiene (Nurses except those in Section A)—Dr. Klopp.

Mental Hygiene (Section A, Nurses)—Professor Melville.

Elective Section Work in Laboratory—Tuberculosis Section.

Smallpox and Scarlet Fever (lantern slides)—Dr. A. A. Cairns, Dr. Maurice Ostheimer, Philadelphia Department of Health.

July 1st.—Intelligence Test, Entire Assembly—Professor Melville, Philadelphia.

Section Work by Dr. John L. Laird, Chief of Laboratories; Dr. T. W. Jackson, Assistant to the Commissioner; Dr. Damaso Rivas, Pathologist, Division of Laboratories.

Legal Problems—Deputy Attorney General, B. J. Myers, Harrisburg.

Legitimate Publicity—Mr. James F. McCoy, Executive Secretary.

Remarks by Colonel Edward Martin, Commissioner.

Impromptu Burlesque Performance, Commencement Exercises and Impersonations. Public Autopsy on John Barleycorn, Deceased.

Motion Picture—"Fit to Win."

July 2d.—Dispensary Problems (Nurses)—Miss Alice O'Halloran, Chief Nurse.

Tuberculosis Clinic (Physicians)—Major W. G. Turnbull, Medical Director, Cresson Sana.

Address to Nurses—Lt. Col. John D. McLean, Deputy Commissioner.

Address to Nurses—Dr. H. L. Hull, Chief Medical Inspector.

Child Welfare (Physicians)—Dr. Dorothy Child, Chief, Division of Child Hygiene.

Epidemiology—Dr. H. L. Hull, Chief Medical Inspector.

Laboratory Work (Nurses)—Dr. Dorothy Child, Chief, Division of Child Hygiene.

Home Economics (Physicians)—Miss Mary R. Fisher, State College, Pa.

Mental Hygiene (Nurses)—Professor N. J. Melville.

SECOND CAMP.

July 7th.—Welcome—Dr. Fred C. Johnson, Medical Director, Mont Alto.

Policies of the Department Administration—Col. Edward Martin, Commissioner of Health.

Activities of the Medical Division with the relation of the Department to local Boards of Health, Dr. Howard L. Hull, Chief Medical Inspector.

Duties of the County Medical Inspectors—Dr. H. L. Hull.
The Engineering Division and its relation to the other Divisions of the Department—C. A. Emerson, Jr., Chief Engineer.

The Department's Future Tuberculosis Campaign—Lt.

Col. John D. McLean, Deputy Commissioners of Health.
Section Work in Laboratory and Tuberculosis.

Recreation.

Local Hospitals for Contagious Diseases—Lt. Col. Thomas W. Jackson, Assistant to the Commissioner.

Cinema—Physical Diagnosis—Government film.

Entertainment.

July 8th—Home Economics (Nurses)—Miss Jeanette Leatherman, State College, Pa. and Miss Truitt, Mont Alto.

Public Health Nursing (Nurses)—Miss Haasis, New York.

The State Laboratory—Preparation and Forwarding of Specimens, Dr. J. L. Laird, Chief of Laboratories.

Laboratory Diagnostic Methods—Dr. J. L. Laird, Chief of Laboratories.

Laboratory Therapeutic Methods—Dr. J. L. Laird, Chief of Laboratories.

Tuberculosis (Nurses)—Captain Thos. Klein, Philadelphia Dispensary.

Clinical Conference on Tuberculosis—Major W. G. Turnbull, Medical Director, Cresson Sanatorium.

Section work in Tuberculosis at Hospital.

Section work at Laboratory.

Recreation.

Circus Tent. Address—Dr. Thos. E. Finegan, State Superintendent of Public Instruction, Harrisburg.

Frequent Errors in Diagnosis of Tuberculosis, with lantern slide demonstrations, Captain Thomas Klein, Philadelphia Dispensary.

Cinema—"End of Road" (Propaganda against Venereal Disease).

July 9th—Typhoid Control—Mr. C. A. Emerson, Jr., Chief Engineer.
Housing Surveys and Housing Legislation—Mr. John Molitor, Chief Bureau of Housing, Engineering Division.

The Abatement of Nuisances—Mr. C. A. Emerson, Jr., Chief Engineer.

The Application of the Anti-Narcotic Laws—Dr. T. S. Blair, Chief, Division of Drug Control.

Home Economics (Nurses)—Miss Leatherman and Miss Truitt.

Public Health Nursing (Nurses)—Mrs. Bessie Haasis, New York.

Tuberculosis (Nurses)—Captain Thos. Klein, Philadelphia Dispensary.

Small section will visit smallpox cases at Waynesboro.

Section Work—Laboratory and Tuberculosis.

Recreation.

Color Ceremonies.

The Department's Campaign Against Venereal Diseases—Major Leon Gans, Chief, Genito-Urinary Division.

Mental Hygiene—Prof. Norbet J. Melville, Public Charities Association, Philadelphia.

July 10th—School Hygiene—Capt. George K. Strode, Chief of Division School Medical Inspection.

Mental Hygiene from the Standpoint of the Psychologist and from the Standpoint of the Psychiatrist—Prof. Melville and Major Bond.

Clinic in Mental Hygiene.

The Sanitary Inspection of School Buildings and Grounds —Mr. John Ziegler, Supervisor of School Sanitation.

Sections in Mental Hygiene, Laboratory and Tuberculosis. Recreation.

The Acute Contagious Exanthemata—Illustrated—Dr. Jay N. Schamberg, Professor of Dermatology, Jefferson Medical College.

The Value of Vital Statistics—Illustrated—Dr. Wilmer R. Batt, State Registrar.

July 11th—Clinical Conference—Lupus—Followed by discussion on the subjects of last evening's lecture, Prof. J. N. Schamberg, Jefferson Medical College.

The Financial Operations of the Department—Mr. C. T. Williams, Chief, Division of Accounts.

The Department Supply Service; including Antitoxin Distribution—Mr. Roy Miller, Chief, Division of Supplies.

Social Service and the Red Cross—Mrs. Martha Magee, Acting Director American Red Cross, Civilian Relief, Penna.-Delaware Division.

Section Work—Laboratory and Hospital (Physicians). Mental Hygiene (Nurses).

Tennis Tournament—Preliminaries.

Functions of the Tuberculosis Dispensary—Quiz—Dr Karl Schäffle, Chief Medical Inspector of Dispensaries.

Cinema—"Fly and Mosquito Eradication."

July 12th—Organization against the Fly Menace—Major Wm. C. Miller, Chief Division of Public Health Education.

Mosquito Eradication—Dr. Damaso Rivas, Ass't Prof. of Parasitology Ass't Director of Tropical Medicine, University of Penna. Pathologist State Laboratory.

Legitimate Publicity in Public Health—Mr. James F. McCoy, Executive Secretary of the Department.

Open Discussion of School Inspection—Mr. John Ziegler, Supervisor of School Sanitation.

Exhibition of Pathological Specimens — Illustrating Parasitology.

Observation of Binet Tests. (Children's Building).

Tennis Tournament:—Finals.

Baseball—East vs. West.

"Flaskerade and Grand Ball of the Coffin Fillers' Union," concluding with the "Follies of Lydia Pinkham."

July 14th—Discussion on Epidemiology and various reports required by the Medical Division—Dr. H. L. Hull, Chief Medical Inspector.

Group Psychologic Test.

Medical Inspection and Mental Clinics—Dr. Isaac Willetts, Psychiatrist Germantown Hospital.

Department Work (Nurses)—Miss Alice O'Halloran, Chief Nurse.

Survey of Mont Alto Sanatorium (Nurses).

All physicians will proceed to the hospital, those having cars taking the aged and alcoholic with them. Each physician will be assigned to a patient with a blank chart for diagnosis and charting the case. This will be followed by discussion with small groups under the leadership of instructors.

Recreation.

Children's Concert.

Some phases of Disease Control, with Special Reference to Maladies Rare or Infrequent in Pennsylvania—Lt. Col. Thomas W. Jackson, Assistant to the Commissioner.

Cinema.

Final U. S. Reels on Physical Diagnosis.

Medical Inspection and "The Haunted Hotel." (Comedy).

July 15th—Departmental Policies—Lt. Col. John D. McLean, Deputy Commissioner of Health.

Water—Mr. C. A. Emerson, Jr. Chief Engineer.

Sewage Disposal—Mr. W. L. Stevenson, Assistant Engineer.

Garbage—Mr. C. A. Emerson, Jr., Chief Engineer.

Oral Hygiene—Motion Pictures (Circus tent)—Dr. A. C. Fones, Oral Hygienist to Public Schools in Bridgeport, Conn.

Public Health Laws of Penna.—Deputy Attorney General, B. J. Myers, Harrisburg.

Excursion to Sanatorium Sewage Treatment Plant.

Vaudeville provided through the courtesy of Hon. Thomas B. Donaldson, State Commissioner of Insurance, Harrisburg.

July 16th—Milk and Dairies—Prof. Frederik Rasmussen, Sec. State Department of Agriculture.

Pasteurization of Milk—Ivan C. Weld, Washington, D. C.

Nutritional Value of Milk, and What to Teach the Public Regarding Food Values.—Prof. E. V. McCollum, Johns Hopkins University, Baltimore.

Discussion—On Pasteurization—Milk dietetics, etc.

Occupational Therapy—Mrs. Frances Hinton, Philadelphia.

Section Work.

Recreation.

Recollections of Mont Alto—Dr. Joseph P. Rothrock.

Municipal Milk Control—Prof. Geo. B. Taylor, U. S. Department of Agriculture.

Cinema—Clean Milk Production.

July 17th—The Activities of the Emergency Aid Society in Coöperation with the Department of Health.—Mrs. J. Willis Martin, President Emergency Aid, Philadelphia.

Garbage Disposal—C. A. Emerson, Jr., Chief Engineer.

Home Economics—Miss Pearl McDonald, State College, Pa.

Symposium by County Medical Inspectors, Dispensary Physicians and Nurses on the Practical Application at Home of the Policies Announced at this Camp.

Gonorrhea and Syphilis—Major S. Leon Gans, Chief, Division of Venereal Diseases.

Conclusion of Symposium.

Section Work.

Recreation.

Baseball Game—Doctors vs. Institution men.

Address—Dr. Wilmer R. Krusen, Director Department of Health, Philadelphia.

Differential Diagnosis in Pulmonary Diseases—Major Milton Howard Fussell, Professor Clinical Medicine, University of Penna.

"Our Own Show."

PROGRAM FOR IMPROMPTU BURLESQUE PERFORMANCE EVENING OF JULY 1.

7:30—Session of Board of Health, City of Hope and Graduation Exercises of Dr. Martin's Training "Schule."

Song—"I Aint Got Thirsty Yet."—By the "Docs."

Song—"Colonel Martin"—By the Nurses.

Song—"But We Doubt It"—By the Nurses.

Prologue—"Nobody."

Opening of session of the Board by President D. L. Pratt and Secretary Hazlett with frequent interruption by the Members from Missouri.

Demonstrations of Experts Before the Board.

1—Professor Hellwill—Brunette tests.

a—Imbecile Class—High Grade.

b—A Child of Six with a Mentality of 60 years.

c—High Grade Imbecile.

d—The Girl with the Depression.

e—A Girl with the Slope.

f—A Hopeless Degenerate.

2—Professor Fancy—A little Gassing and Clinical Demonstration. (Tin-pan-itis).

3—Professor Ostermoor—A Magic Lantern Demonstration of Diseases Conveyed by Contract.

Demonstration of the Alto Adjustable Desk which "provides for various eventualities including ventilation of priwy vaults with wapor under adwerse conditions."

Cross Red Nurse will speak on "Back Grounds."

"The Social Evil."

Summing up of evidence by the Board.

Graduation Exercises.

Song.

Recitation on the Fly.

Song.

Other Recitations.

Essay on "What Every Nurse Should Know."

Address to the class.

Valedictory.

Autopsy performed on one J. Barley Corn by Wm. C. Miller,
Pathologist; deceased apparently died from rupture of the
jugular vein.

Amputation of Reveille.

Military Burial, Wm. Miller, Pathologist.

Lament by chorus of Faithful Rumhounds—"How Dry I Am."

Dirge—"And When I Die."

Taps.

PROGRAM OF "OUR OWN SHOW," EVENING OF JULY 17.

1—"How Dry I Am!"—The Ruby Nosed Quartette.

"Just Pickle My Bones!"—Chorus of Faithful Rumhounds.

2—Clog Dance.

3—Humorous Monologue.

4—The Psychological Examination of Little "Monty."

5—Travesty performed by the Ban Gleet Players.

"Hamomlet, Prince of Old Green River."

The Ghost of John Barleycorn, positively guaranteed to appear
from the neighboring mountain *stillness*.

6—Grand Demonstration of the Newer "Eddyism."

County Medical Inspectors:

Altman, Dr. O. R., Uniontown.

Ashcraft, Dr. E. H., Coudersport.

Banks, Dr. W. H., Mifflintown.

Barckley, Dr. R. F., Milford.

Bashore, Dr. H. B., West Fairview.

Beyer, Dr. Meigs, Punxsutawney.

Bovard, Dr. F. J., Tionesta.

Bray, Dr. E. G., East Mauch Chunk.

Brisbin, Dr. C. H., Lewistown.

Butz, Dr. J. T., Allentown.

Christian, Dr. J. L., Lopez.

Cleaver, Dr. Israel, Reading.

Crist, Dr. C. G., Gettysburg.

Falk, Dr. H. S., Emporium.

Fisher, Dr. P. P., Sharon.

Frontz, Dr. H. C., Huntingdon.

Gordon, Dr. J. W., Clearfield.

Hill, Dr. W. de la M., Everett.

Iams, Dr. S. H., Waynesburg.

Johnston, Dr. A. R., New Bloomfield.

Kinter, Dr. John, Chambersburg.

Knipe, Dr. Reinoehl, Norristown.
 Large, Dr. C. P., Meyersdale.
 Lathrop, Dr. H. B., Springville.
 McKee, Dr. T. N., Kittanning.
 McKown, Dr. H. L., Tunkhannock.
 Matthews, Dr. W. E., Johnstown.
 Miller, Dr. J. S., York.
 Miner, Dr. C. H., Wilkes-Barre.
 Moore, Dr. J. D., New Castle.
 Mosser, Dr. J. W., McConnellsburg.
 Neilsen, Dr. L. B., Honesdale.
 Neufeld, Dr. M. A., Chester.
 Phillips, Dr. C. R., Harrisburg.
 Plymire, Dr. I. S., Doylestown.
 Pratt, Dr. D. L., Towanda.
 Reifsnyder, Dr. J. C., Scranton.
 Roberts, Dr. J. K., Meadville.
 Rogers, Dr. J. B., Pottsville.
 Ross, Dr. C. C., Clarion.
 Scattergood, Dr. Joseph, West Chester.
 Schmehl, Dr. C. W., Warren.
 Seibert, Dr. J. L., Bellefonte.
 Shultz, Dr. Cameron, Danville.
 Simmons, Dr. R. H., Shamokin.
 Simpson, Dr. W. A., Indiana.
 Snodgrass, Dr. Bruce, Beaver Falls.
 St. Clair, Dr. H. P., Butler.
 Strayer, Dr. J. P., Oil City.
 Thornton, Dr. Harry, Lewisburg.
 Wagenseller, Dr. H. F., Selinsgrove.
 Webb, Dr. C. W., Wellsboro.
 Witmer, Dr. C. H., Lancaster.
 Wood, Dr. C. B., Monongahela.
 Wright, Dr. J. W., Erie.
 Youngman, Dr. C. W., Williamsport.

Dispensary Physicians:

Biddle, Dr. P. G., Dushore.
 Bittinger, Dr. J. H., Hanover.
 Blair, Dr. Ruth, Wilkes-Barre.
 Bowers, Dr. B. F., St. Benedict.
 Brown, Dr. Carl, Scranton.
 Caffrey, Dr. Anne R., Philadelphia.
 Dancy, Dr. H. H., Phoenixville.
 Davisson, Dr. A. H., Philadelphia.
 Dietrich, Dr. George, Coatesville.
 Egbert, Dr. W. E., Chester.
 Eggers, Dr. A. H., Pittsburgh.
 Emerick, Dr. M. W., Harrisburg.
 Fabbri, Dr. R., Norristown.
 Flanagan, Dr. M. J., Shamokin.
 Fogleman, Dr. J. P., Homestead.
 Francine, Dr. A. P., Philadelphia.
 Fullmer, Dr. C. L., Renovo.

Gruhler, Dr. C., Shenandoah.
 Hazlett, Dr. E. M., Washington.
 Horner, Dr. M. W., Mount Pleasant.
 Janvier, Dr. Florizel, Philadelphia.
 Jessup, Dr. R., York.
 Jones, Dr. E. L., Philipsburg.
 Jordan, Dr. R. R., DuBois.
 Keck, Dr. A. S., Altoona.
 Keiter, Dr. J. H., Lykens.
 Klein, Dr. Thomas, Philadelphia.
 McComb, Dr. S. F., Tarentum.
 McDowell, Dr. H. F., Franklin.
 Maulfair, Dr. H. E., Lebanon.
 Miller, Dr. W. G., Norristown.
 Myers, Dr. H. F., Lancaster.
 Noah, Dr. H. G., Pittsburgh.
 Peck, Dr. D. J., Susquehanna.
 Read, Dr. John, McKeesport.
 Schmoyer, Dr. H. J., Bethlehem.
 Schultz, Dr. W. C., Waynesboro.
 Simpson, Dr. A. F., Chester.
 Singer, Dr. Benjamin, Philadelphia.
 Smink, Dr. A. H., Shamokin.
 Smyser, Dr. H. D., York.
 Snodgrass, Dr. Boyd, Beaver Falls.
 Thunhurst, Dr. W. L., Wikinsburg.
 Tucker, Dr. J. D., New Castle.
 Wiess, Dr. E. R., Pittsburgh.
 Williams, Dr. W. T., Mt. Carmel.
 Williams, Dr. T. L., Mt. Carmel.
 Young, Dr. Anne, Philadelphia.

Health Officers:

Herbert, T. G., Altoona.
 Stambaugh, F. Y., Hanover.

Nurses:

O'Halloran, Miss Alice, Chief Nurse, Harrisburg.
 Parsons, Miss Margaret, Assistant, Harrisburg.
 Allen, Miss Mary B., Allentown.
 Armstrong, Miss Helen, Philadelphia.
 Auker, Miss Ella, Mifflintown.
 Barclay, Miss Jessie G., Homestead.
 Bernheisel, Miss Kate, Green Park.
 Black, Miss Julia, Huntingdon.
 Bock, Miss Anna, Hazleton.
 Borthwick, Miss Mary, Peckville.
 Brady, Miss Kate, Butler.
 Brice, Miss Alice, New Castle.
 Brookbank, Miss Nellie, Johnstown.
 Brown, Miss Lillian, Philadelphia.
 Butler, Miss Sara, Harrisburg.
 Caffrey, Miss Eleanor, Philadelphia.

Cawley, Miss Helen, Philadelphia.
 Conley, Mrs. E. T., Pittsburgh.
 Crozier, Miss Ruth J., Scranton.
 Culbertson, Miss E. V., Lewistown.
 Dennie, Miss Elizabeth, Media.
 Denny, Miss Helen M., Pittsburgh.
 Diehl, Miss Caroline, Allentown.
 Douglas, Mrs. Gertrude, Corry.
 Doyle, Miss Mary A., Philadelphia.
 Doyle, Miss Mary E., Philadelphia.
 Duncheskie, Miss Ella E., Monongahela.
 Dunsmore, Miss Sarah, DuBois.
 Dupont, Mrs. K. M., Harrisburg.
 Ellis, Miss L. E., Waynesboro.
 Ellwanger, Miss Carolyn, Scranton.
 Evans, Mrs. Mary, Towanda.
 Ferris, Miss Bessie, Tunkhannock.
 Fiest, Miss Estella, Shenandoah.
 Fitzgerald, Miss Nora, Girardville.
 Flynn, Miss M. E., Uniontown.
 Flynn, Miss Margaret G., Cheltenham.
 Follmer, Miss Rhetta, Bloomsburg.
 Fothergill, Miss Margaret, Lebanon.
 Fox, Miss Katherine, Philadelphia.
 Frey, Miss Minnie, Pittston.
 Fry, Mrs. Evelyn, Philadelphia.
 Gillick, Miss Laura A., Doylestown.
 Grafe, Miss Anna, Oil City.
 Graybill, Miss Elda, Harrisburg.
 Green, Miss Sarah E., York.
 Guthrie, Miss Hannah P., Phoenixville.
 Harris, Mrs. Ida Jewell, Sharon.
 Hart, Miss Anna M., Harrisburg.
 Hartleb, Miss Elizabeth, Erie.
 Haverkamp, Mrs. Gwendolyn, Wiconisco.
 Hays, Miss Blanche, Philadelphia.
 Hayes, Miss Jeanette, Philadelphia.
 Henrich, Miss Clara B., Lancaster.
 Hensel, Miss Clara A., Punxsutawney.
 Hepburn, Miss Bess, Johnstown.
 Hess, Miss Carrie I. M., Philipsburg.
 Hileman, Miss Anna, Sunbury.
 Hilkert, Miss Elizabeth, McKeesport.
 Hitchcock, Miss Anne, Harrisburg.
 Holmes, Miss Elizabeth, Pittsburgh.
 Hoofnagle, Miss Susan, Penbrook.
 Hurley, Miss Alice, Wilkinsburg.
 Hurst, Miss Nora P., Tarentum.
 John, Mrs. Ruth, Downingtown.
 Jones, Miss Emily G., Wilkes-Barre.
 Kammerer, Miss Margaret, Johnstown.
 Kennedy, Miss Viola, Carbondale.
 Kerstetter, Miss Rona, Chambersburg.
 Kester, Miss Lulu Dale, Shenandoah.
 Kirsch, Miss Hildegard, Lancaster.

Kleinsorgen, Miss Emily, Altoona.
 Knight, Mrs. Estella B., New Brighton.
 Lafferty, Miss Anna M., Reading.
 Larzelere, Miss Clara, Mt. Carmel.
 Law, Miss Jessie, Washington.
 Lawson, Miss Viola C., Kittanning.
 Lee, Miss Carrie O., Altoona.
 Lewis, Miss E. Hilda, Wilkes-Barre.
 Lewis, Miss, Frankford.
 Lewis, Miss Irene, Wilkes-Barre.
 Lockett, Miss Ida, Mechanicsburg.
 Loftus, Miss Nellie G., Wilkes-Barre.
 Lynch, Miss Kathryn S., South Bethlehem.
 Lynch, Miss Nellie E., South Bethlehem.
 McCaffrey, Miss Mary, Pottsville.
 McCann, Mrs. Kathryn, Scranton.
 McEntee, Miss Kathryn, Warren.
 McFeeley, Miss Susan, Erie.
 McGowan, Miss Elizabeth, Braddock.
 McQuade, Miss Catherine, Pittsburgh.
 Martin, Miss Agnes, Hanover.
 May, Miss Jennie, Wilkes-Barre.
 Menger, Mrs. Sara, Harrisburg.
 Merrick, Miss Catherine, Inkerman.
 Miller, Miss Elizabeth R., Easton.
 Miller, Mrs. Jane P., Bangor.
 Moyer, Miss Florence, Reading.
 Murphy, Miss Nell, Carrolltown.
 Neary, Miss Katherine, Scranton.
 O'Hara, Miss Helena, Oil City.
 Patterson, Miss Isabelle, Reading.
 Phillips, Miss Florence, Philadelphia.
 Quinn, Miss Mary J., Lebanon.
 Rea, Miss Ruth, Wilkes-Barre.
 Richards, Miss Mae, Philadelphia.
 Rush, Miss Ophelia, N. S., Pittsburgh.
 Schwartze, Miss Alberta, Pottsville.
 Sheehy, Miss Lucy, Shenandoah.
 Shellenberger, Miss Lucy, Carlisle.
 Silvera, Mrs. Ethna, Dorranceton.
 Simons, Miss Jennie, Williamsport.
 Smith, Miss Sara, Milton.
 Stafford, Miss Edna, Meadville.
 Stein, Miss Minnie, Avon.
 Sullivan, Miss Mary, Hyndman.
 Thompson, Miss Roby, Clearfield.
 Tinner, Miss Mary E., Hazleton.
 Tritschler, Miss Louise, Allentown.
 Walker, Miss Alma, Williamsport.
 Walsh, Miss Jane, Philadelphia.
 Walsh, Miss Mary E., Philadelphia.
 Welsh, Mrs. Marie K., York.
 Whelen, Mrs. Pearl, Harrisburg.
 White, Miss Angeline, Washington.
 Williams, Miss Maud, Butler.

Willingham, Miss Phoebe, Lansford.
 Willison, Miss Mabel, Pittsburgh.
 Witting, Miss Marie, Ashland.
 Willour, Miss A. Margaret, Punxsutawney.
 Worthington, Mrs. Katherine, Chester.
 Young, Miss Mildred, Danville.
 Zimmerman, Miss Stella, Selinsgrove.

Clerks:

Bruno, Miss Clara, Philadelphia.
 Campbell, Miss Nettie B., Clarion.
 Conahan, Miss Madeline, Chester.
 Greenfield, Miss Ella, Philadelphia.
 Lindley, Miss Caroline, Harrisburg.
 Lucas, Miss Bertha, Pittsburgh.
 Okewicz, Miss Margaret, Shenandoah.
 Robertson, Miss Janet, Mechanicsburg.
 Shirk, Miss Sara, Lancaster.
 Souders, Miss Agnes, Philadelphia.
 Tucker, Miss Lida, Wilkes-Barre.

Stenographers and Camp Attaches:

Cooper, J. W. B., Sanitary Officer.
 Ernest, Miss Alma G., Stenographer.
 Hanna, Miss Leola, Stenographer.
 Ingram, Miss Martha, Stenographer.
 Irwin, Capt. R. E., Assistant Engineer (Quartermaster).
 Melville, Miss Marie, Stenographer.
 Miller, Joseph, Cinematograph Operator.
 Ness, Daniel V., Chief Public Service Sub-Division.
 Myers, George, Watchman.
 Rowland, Miss Violet B., Stenographer.
 Wenner, John J., Assistant to Chief of Laboratories.
 Wolfe, Earl, Bugler (N. G. P.).
 Russiam, John, Bugler (U. S. A.).

Visitors:

Allison, Miss E. E., Cresson.
 Andrews, Mrs. G. D., Harrisburg.
 Brown, Mrs. Helen, Harrisburg.
 Buch, Mrs. Nell D., Harrisburg.
 Cairns, Dr. A. A., Philadelphia.
 Cannon, Miss Antoinette, Philadelphia.
 Cuthbert, Dr. E. P., Evans City.
 Donaldson, Thomas B., Harrisburg.
 Eisley, Edward F., Harrisburg.
 Finegan, Dr. T. E., Harrisburg.
 Fisher, Miss Mary R., State College.
 Fones, Dr. A. C., Bridgeport, Conn.
 Fussell, Dr. Milton R., Philadelphia.
 Haasis, Mrs. Bessie, New York City.
 Hammond, Dr. Frank, Philadelphia.
 Harris, Mrs. Wilbur F., Harrisburg.

Harsha, Dr. J. V., Harrisburg.
 Hinton, Mrs. Frances, Philadelphia.
 Huber, Miss I. E., Harrisburg.
 Hull, Mrs. H. L., Camp Hill.
 Jackson, Thomas W., Jr., Philadelphia.
 Klopp, Dr., Rittersville.
 Krusen, Dr. Wilmer, Philadelphia.
 Lathrop, H. B., Jr., Springville.
 Leatherman, Miss Jeannette, State College.
 Lewis, Miss Mary, Harrisburg.
 Lewis, Miss Gertrude, Pottsville.
 McCauley, Miss Nan, Harrisburg.
 McCoy, Mrs. J. F., Harrisburg.
 McCrea, Dr. Thomas, Philadelphia.
 McCullough, S. W., Harrisburg.
 McCollum, Prof. E. V., Baltimore, Md.
 McDonald, Miss Pearl, State College.
 McLean, J. D., Jr., Harrisburg.
 Magee, Mrs. Martha, Philadelphia.
 Martin, Mrs. Edward, Media.
 Martin, Mrs. J. Willis, Philadelphia.
 Melville, Prof. N. J., Philadelphia.
 Mentz, Mrs. Mary, Hamburg.
 Miller, J. S., Jr., Harrisburg.
 Myers, Bernard, J., Harrisburg.
 Ostheimer, Dr. M., Philadelphia.
 Perry, C. R., Harrisburg.
 Rank, D. M.
 Rasmussen, Hon. Fredk., Harrisburg.
 Rebuck, Dr. C. R., Harrisburg.
 Reed, Miss E. E., Hamburg.
 Rivinus, Miss Mary M., Philadelphia.
 Robinson, Dr. Wm. D., Philadelphia.
 Rothrock, Dr. Jos. T., West Chester.
 Schaffer, Charles, Philadelphia.
 Schamberg, Dr. Jay, Philadelphia.
 Simonis, A. E., Tremont.
 Speakman, Miss Evelyn, Harrisburg.
 Strode, Mrs. George K., Camp Hill.
 Taylor, George B., Washington, D. C.
 Watkins, Gwilym, Harrisburg.
 Watson, Dr. Frank, Haverford.
 Weld, Ivan C., Washington, D. C.
 Willetts, Dr. Isaac, Philadelphia.
 Wood, Miss Elizabeth, Philadelphia.
 Young, Miss, Harrisburg.

Press Correspondents:

Messrs. Dutton, Philadelphia; Harnlett, Philadelphia; Kearney, Philadelphia; Leonard, Philadelphia; Mok, Philadelphia.

ADDRESSES.

(Administration Policies, Vital Statistics and Reminiscence).

ADDRESS TO COUNTY MEDICAL DIRECTORS—(Discussion)—
Col. Edward Martin, Commissioner of Health.

ADDRESS OF WELCOME—Col. John D. McLean, Deputy Commissioner.

DEPARTMENTAL POLICIES—Col. John D. McLean, Deputy Commissioner.

ADDRESS—Dr. Wilmer Krusen, Department of Public Health and Charities, Philadelphia.

VALUE OF VITAL STATISTICS—(Discussion)—Dr. Wilmer R. Batt, State Registrar.

REMINISCENCES OF MONT ALTO—Dr. Joseph P. Rothrock.

LEGITIMATE PUBLICITY—James F. McCoy, Executive Secretary.

ADDRESS TO THE COUNTY MEDICAL DIRECTORS, BY COL. EDWARD MARTIN, COMMISSIONER OF HEALTH.

My words of greeting having only the value of the moment, are supplanted by an outline of general policy and of your function therein, suggested in part by you during our four pleasant weeks of camp life.

The Department of Health wants results; these from you in the form of brief, clear, prompt reports.

Broadly, the Sanitary Index is a measure of results. It can be made satisfactory only by the active help of all the willing and intelligent citizens of your county. You are to form—and drive—an army of health workers.

You will have as your immediate supporters the County Health Council—five active leading citizens, men or women, either or both; The County Health Committee, formed by representatives of all organizations enlisted in health work; The County Medical Society, State Clinic Chiefs and Assistants, State School Inspectors, State Health Officers, State Nurses, and the County Newspaper.

Through these agencies you will enlist your army of workers stationed in every municipality of your county. This grouping for health work will be effected by The Emergency Aid, The Red Cross, The Council of National Defense, Chamber of Commerce, Rotary and Kiwanis Clubs, Fraternities, Church and Labor groups, Young Men's Christian Association, Young Women's Christian Association, Salvation Army; all organizations having for their aim civic betterment.

Every municipality in your county must have adequate ordinances; and agents who satisfactorily enforce them.

The School Inspectors nominated by you must know their work and do it well. Insanitary school conditions reported by them must be remedied promptly. Children requiring corrective measures must receive them.

A survey of children below school age should be inaugurated only when complete plans have been formulated for remedying insanitary conditions;—with special reference to hopelessly unfit parents, bad housing, poor nourishment, syphilis, and tuberculosis contacts.

Contagious diseases must be reported promptly. Diphtheria anti-toxin must be given early and in adequate doses.

The venereal diseases will be controlled by elimination of the prostitute, the treatment till cured of those infected, the finding and sequestration of habitual foci of infection, and the general knowledge that by the use of an early treatment package approved by the State Department of Health and obtainable at any drug store, the danger of developing disease may be lessened ninety per cent.

The tuberculosis campaign is based on early diagnosis; instructions directed toward self help and the protection of others; proper nutrition; the removal of dangerous contacts, particularly those involving children; occupational therapy; and a study of the mixed infections from which the tubercular usually die.

The sanatoria should be used for cases which can be arrested or cured; for hopeless cases where needful to save children from dangerous contact.

Each municipality should direct its own sanitation. None should be carried by the State. A take-over may be needful as a temporary measure.

Always the State is at the call of those who need help; its function is to support and strengthen existing institutions, organizations and local administrations.

DISCUSSION OF COL. MARTIN'S OPENING ADDRESS.

Q.—Should the County Medical Inspector go into a borough where there is a Board of Health without first being notified so to do by the central office?

A.—You are responsible for your own county. The County Medical Inspector is a big man; he is as big as he makes himself. You would first call upon the health officer of the borough.

You have the power to have any Board of Health in your county discharged and you have authority to ask the central office to take it over and administer it through you. We don't want to use that power but we can do it and as soon as the Mayor or Burgess learns that we might do it he will be mortified and get busy. We have the punch but we are saving that punch. We can take over any health organization of the State of Pennsylvania if the conditions are threatening adjoining communities.

In boroughs and townships we can take over and administer health affairs and they will have to pay the expenses of such administration.

Q.—When a Board of Health sends out a notification with reference to a nuisance, why do they send the notice to the landlord instead of notifying the tenant?

A.—The landlord is responsible.

Q.—Suppose the landlord is twenty miles away, why should he be held responsible for the garbage of his tenants?

A.—The landlord is your lever and if you devil him you devil them.

You can go in and clean up and charge him; you can't go in and clean up and charge the tenant; the bill comes against the landlord.

When a thing or a condition is reported and nothing is done it is a waste of time, energy, ink, and paper. Anything that isn't used is junk and we don't want pigeon holes loaded with junk or with any report without its report of action. After you make your report don't sit down and say "I've done my duty" but follow the thing up and see that the evil is remedied. If it isn't done report it to the central office. So, when you report, follow on and on and on and get results.

Q.—Will what you have stated in regard to cities apply to cities of the third class where one of the Commissioners is in charge of health affairs and has totally neglected his duty in every respect,—and will the Department of Health go in and administer affairs?

A.—We can go in through the courts, but we will have to pay the bill;—but we will go in if needful and we will pay the bill if it is going to protect the health of our citizens.

Q.—Have the dispensary men anything to do with this?

A.—The dispensary physicians have, I think, been confining themselves too closely to tuberculosis; they have become experts in tuberculosis, but we want every physician also to play the game of health.

Q.—What is your opinion of having Deputy Inspectors, throughout certain large counties? Is there any law providing for them? It is rather a hardship for one man to look after a large county and if we had deputy inspectors I feel that it would be a great help in the work.

A.—The opinion of the central office is thoroughly fluid; you are here to show us how we can help you. It is up to you to make suggestions, by which this administration can be reasonably economical and thoroughly efficient. The proper name or term of this camp should have been a "Camp of Conference." Get together and write just what you think will help and we will brood on it and try to give you what you want.

Q.—Using the illustration of the flies, I am entirely in sympathy with your hope. Three or four years ago in Hershey we demonstrated two small epidemics of typhoid as coming from flies; the next year they had a fly campaign and got rid of flies; the reason being that Hershey was run by one man; the following year they had flies, but not so many. The difference between that place and Pleasant View, for instance, is explained by the inertia of the average person. The average person is willing to put a cover on a slop pail but if a child knocks it off he will not go out and put it on again. (Dr. Phillips).

A.—It is a big job; there are a dozen difficulties; but if this organization is to be worth anything our motto is going to be "there isn't anything in health that can't be done."

In Hershey you had one man whose motive was probably dollars; his business was being affected by flies, his employees were sickening, he got busy; the result was a town free from flies.

I have a feeling that a higher and better motive is human health and life and with that motive you have your entire community back of you, anxious to co-operate if you will only tell them what you want them to do. You are the drivers. The County Medical Inspector can't go around and see that every gar-

bage can is covered, but he can depute organizations to see that it is done. It can be done and you fellows can do it and you women can do it. You are public health nurses and your job is the public health.

Have we or have we not, more exanthemata than we ought to have? Is our profession as a whole scrupulously careful about early reporting? (Col. Martin).

A.—No. (Unanimous).

The man in the community who has the reputation of being considerate of his patients and not quarantining;—what is the answer to that? How can you take hold of him? What is your lever there? Your County Medical Society. How about a strong expression of opinion? How about getting that crowd together and agreeing that a man who doesn't report is to get what's coming to him? You have your newspapers;—use them. (Col. Martin).

Q.—How about the districts where there are mostly foreigners, where the families do not call in a physician?

A.—We have a regulation, with the force of a law covering that.

Dr.—These diseases are largely school diseases; if the school teachers were taught in the County Institutes; if the County Medical Inspector, or somebody representing the State Health Department went to every county institute this year and took twenty minutes to tell the teachers the importance of reporting every suspicious rash, I think it would be helpful.

Col. MARTIN.—How much trouble does come from teachers failing to recognize that a child is sick?

Dr.—A great deal. The teachers are afraid to report their suspicions or send the child home on account of the parents. I think a good plan would be the following: Frequently we have a case of contagious disease in a family where there are school children. They do not call in a physician but keep the children home from school for a few days. No child should be allowed to stay out of school more than two days without a certificate from a physician showing that no contagious disease exists in the house. There should be a school nurse to follow up all such cases.

Dr.—We have in the city of Allentown an ordinance holding the householders responsible for reporting suspicious conditions of disease and it works out very well. I think the same thing should be required by the state and townships and boroughs.

Col. MARTIN.—You have the power to have your local boards pass local ordinances covering these things and where the State Law doesn't cover the local situation you can get any ordinance you want passed by the local board.

Dr.—I find that a great many school teachers are ignorant of the health laws and the matters of quarantine and exclusion from school of children coming from infected homes. I want to suggest that we ask every county superintendent in the State of Pennsylvania this Fall to give twenty minutes to the County Medical Inspector, to address those teachers from all over the county and explain the health laws, the quarantine laws, and what they are for;—this request to go out from the central office to the county superintendents.

Col. MARTIN.—This is being done this Fall.

Q.—What about the school director who refuses to coöperate?

Col. MARTIN.—With all your local organizations back of you, with the people back of you, and the State Department of Health back of you, no school director can stand against you. The policy from now on is—"Everything centers in the County Medical Inspector." I have heard rumors that some of your health officers are not up to a point where they are absolutely and highly efficient. Is this true?

A.—Yes.

Col. MARTIN.—Pick them out and let us know about them. If we can train them we will do it, but if not and they are hopeless, we will fire them.

We are after the goods and we are going to get them.

ADDRESS OF WELCOME, LT. COL. McLEAN.

I want to carry the thought expressed by Colonel Martin a little further.

You will remember he said that when he was the C. O. of his team at the hospital he thought it was big, but that this is much bigger. I wonder if each one of you knows just how big this team is? You have thought of your work as it centers around your own community; that is only a very small part of the team.

Do you know that you make up a team in the State of Pennsylvania fighting for the health of the people of Pennsylvania and that that team is over 6,000 strong? Did you ever think how big you are? It isn't the central office that is big, it is the field workers and the object of thus bringing you together isn't instruction after all—it is conference—you instruct us and we instruct you, and if this camp goes away one-half as enthusiastic as the last one did it will be a magnificent success.

We feel from the education we have ourselves received during the last camp that you will go away even more enthusiastic over the work than the attendants at that camp did. I want to say that every member of that camp wished he could stay longer—one man even made the request that he be permitted to come back for the second camp.

What will be the success of this camp we do not know—it is up to you.

DEPARTMENTAL POLICIES—LT. COL. JOHN D. McLEAN.

As the leaders in each section composing the districts making up this team, known as the Department of Health, you have been asked to come to this camp, not for instruction, but for conference.

The object of the camp is not to have the chiefs of the different divisions tell you all about it any more than it is for you to tell us and I hope that in the days since you have been here you have not hesitated at any time to criticise the workings of the central office or the doings of any one of its chiefs. If we are wrong tell us so and let us correct it.

The success of the work in this State can be measured only by the work done by each individual member of the team. Remember when you go back home, if you have not appreciated it before, that in the district where you have charge you are the State Department of Health, backed up always by the central office in anything you do, if it is done under the laws of the State.

One of the things that we hope you have learned, or will learn, is that you have enormous powers under the laws of the State of Pennsylvania, which we hope it will not be necessary to exercise at very frequent intervals.

I do not know whether any of you have appreciated the significance of the Bill recently passed by the Legislature and signed by the Governor, the Bill which we call 1642, and which means that the Commissioner of Health, with his Advisory Board, has the right to determine that any disease is transmissible and provide rules and regulations for its control.

How is that going to work? Just this way: If something arises in your district it is for you to notify the central office that a certain condition exists in your community, or in your district, which is spreading from one person to another and that you would definitely recommend that a certain thing be done; that a certain regulation should be passed and approved.

I was wondering last night when the diagnostic pictures were being thrown on the screen just what the nurses were getting out of it. One thing that I think stood out more prominently than anything else was this,—that the nurses were having presented to them in a very graphic form the fact that the doctor isn't infallible in his diagnosis, that he can and does make mistakes—and when I say that I mean myself just as much as any member of the organization. Those pictures last night told us just this, that we have to be very careful to make a proper diagnosis in order that we shall not place the stigma—because that is what it is—of a diagnosis of tuberculosis on anyone unless we are absolutely sure that he has tuberculosis.

This, in a very meagre way, is just why you are here. I don't know whether you have criticised us, but don't hesitate to do it. When any of the speakers get up on this platform and addresses you on a certain subject, don't hesitate to question him.

We want everyone of you to go back prepared to answer all questions which may be asked by the people of your community. Don't you know that the Commissioners, or Councilmen, or official fathers of each community are only too anxious to be shown what they should do to improve their communities from a health standpoint? And to whom should they come but to you—not to the central office in Harrisburg, but to you.

If you know,—and we hope you will,—answer them. If you don't, come to us and we will give you the information and ask you to carry it on to them. We want your community to realize that you are the State Department of Health; and this includes the nurses as well as the doctors.

(ABSTRACT.)

Address by

Dr. Wilmer Krusen,
Director Public Health and Charities, of Philadelphia,
Philadelphia, Pa.

Fellow Health Officers, Fellow Directors:

Nothing but a strict obedience to a superior officer makes me inflict upon you a brief speech on this occasion. To serve the great Chief of the Health Department of Pennsylvania is a pleasure; to displease him would be painful.

My friends, it is a pleasure to be here to-night to participate in an old fashioned camp meeting, particularly the music, which is somewhat different from the old fashioned tunes we used to sing in the camp meetings that I used to drive to in a buggy, some forty years ago.

To speak seriously, the health work of the city of Philadelphia and the health work of the State of Pennsylvania constitute, to my mind, the most important work under the executive of the State of Pennsylvania.

There are three characteristics which a health officer must possess; first, he must have complete knowledge of the sciences; secondly, the health officer must possess adaptability to apply the knowledge of the sciences he possesses to the needs of the occasion; and this is where good common sense enters into the administration of our work. Third; last but not least, he must possess tact, amiability and character in combination and must set the health officers of the State a good example. He must show the people of the State the qualities he possesses in order to solve successfully the health problems of the Commonwealth.

VALUE OF VITAL STATISTICS.

Dr Wilmer R. Batt, State Registrar, Bureau of Vital Statistics,
Department of Health.

I am afraid the subject of vital statistics will be very dry and uninteresting because it is something that individually we are inclined to take very little interest in.

Every year in the State of Pennsylvania we have approximately 125,000 deaths, 225,000 births and 75,000 marriages. These very important events in human life constitute the basis of what we call vital statistics. The records of our State in this respect were not very promising until January 1, 1906. Prior to that time this State was without a record of the most important events in human life, except in a few of our large cities. This was remedied by the Legislature making the registration of births and deaths one of the functions of the Department of Health.

There are two distinct phases concerning the registration of vital statistics to which I would like to call your attention and the first is one which seemed to call for the least attention when the Department was organized,—not only in Pennsylvania, but throughout the United States,—it is not the statistical value of registration, but the social service value to the State.

It was not appreciated just what a magnificent and valuable record this would be to the people of the United States. I wish the word statistics were not included in the Act because it did create an idea in the minds of the people and physicians that this was nothing more or less than a mild curiosity shop of purely statistical value for physicians connected with the Health Department and those who wished to compile statistics for subjects in which they were interested. It was unfortunate that that opinion was created and it was largely due to the use of the word statistics.

Registration of Births, Deaths and Marriages.

The people of the State are beginning to appreciate, and you in your daily work are in a position to impress upon the people, the importance of registering the time, place and circumstances surrounding the birth of a child.

The child is helpless; it can do nothing for itself; the State must do it. If we do not think enough of these children to record this vital event in order to protect their property interests and establish their citizenship we need expect very little from them.

In the matter of deaths, the scientific value depends entirely upon the statement of the physician as to the cause of death and the circumstances surrounding death. There are thousands of returns couched in different languages and we have apparently never learned to talk in a common language of the causes of death. They must be reduced to the common standard if they are to be of value. The data recorded on the individual statistics contribute to the value of the mass. The individual cause of death is the basis upon which we compile our statistics of death.

These records are permanent records. There are two essentials:—one is that they should be written in unfading ink. We are compelled to return certificates written in lead pencil. It would be only a very short time until those certificates would be illegible or lost.

The second thing is that they should be filled in intelligently and clearly. You would be surprised to know how perfectly willing physicians are to convict themselves of their inability to write or express themselves concerning the deaths of their own patients.

There is another class of certificates which we receive which is incomplete and must be returned. It is not because we want to be captious; the reason is that we are anxious that those certificates, being used as public records, shall be permanent and if they are used in courts that they shall reflect a fair degree of intelligence not only on the part of the person who originated them but on the part of the person who filed them.

I want to call your attention to the element of time. We have been making a tremendous effort to have our births recorded within ten days.

Experience has shown us that ten days is a very reasonable time in which to request physicians or midwives to make a return. A

longer time leads to carelessness and neglect. Having made ten days the limit of time, what happens when the physician reports that death in twelve or fifteen days?

A registrar is required to record the date on which the report is received and the physician or midwife is required to record the date of birth, so that if this certificate is used as evidence in court its value is depreciated. You can see the hopeless task confronting children who depend on birth certificates to establish their claims and who find after ten or fifteen years that that birth certificate is worthless because the doctor or midwife was too negligent to comply with the law.

I mention these facts because you in your daily intercourse with physicians will be able to explain to them the value of prompt birth registration, not only to the State but to their own people. The State keeps them as a permanent record but the physicians and midwives of the State should realize that the registration of births is primarily of value to their own patients; secondarily of scientific and statistical value to the State.

Again, as to the statistical value of these records: I simply want to state to you that unless we know when, where, how and under what circumstances our people are dying we have no way to find out the value of all the money and efforts we are spending to make life better and longer for our people.

These statistics, as far as the Health Department is concerned, really constitute a barometer concerning the efforts of our people at large. We cannot do everything, we must depend upon the people and every reduction of the death rate indicates a better appreciation on the part of our people of just what is necessary to prolong life and just what is necessary to secure better standards of living.

I have had a few slides prepared to call your attention to some incomplete certificates. (Lantern Pictures Shown).

DISCUSSION.

Q. I am not sure that we understand the legal reason for the reporting of a birth or a death within ten days; what is the legal reason why a birth certificate could be challenged if produced in court, if certified by the physician within thirty days after birth?

A. There is an Act of Legislature stating that a certificate must be filed within ten days after birth. It is a statutory provision.

Q. Has there ever been a case in which a certificate has been illegal after ten days?

A. Not in Pennsylvania but there have been in other states where the registration of births has been in existence for a longer period of time.

I want to say that we have not reached the beginning of the valuable period of birth registration in this State. It is when the children have passed fourteen years of age and are required to have employment certificates that we are going to get many requests for certified copies of births. At the present time;—just to show you to what extent our Bureau is used,—we issued 25,000 certificates last year for the settlement of estates, pensions, etc. This was partly due to the war and included certificates for soldiers' allotments and pensions.

REMINISCENCES OF MONT ALTO—DR. JOSEPH P. ROTH-ROCK.

It gives me a great deal of pleasure to say just a word about the commencement of tuberculosis work on this mountain.

In the year 1876 I was a candidate for the Chair of Botany in the University of Pennsylvania. I was elected to that Chair and the Honorable Eli K. Price, a distinguished citizen of Philadelphia and a member of the Board of Trustees who was particularly interested in forestry, said to me "Now, we have elected you and I want you to make the care of the forests of Pennsylvania your life work and I want you to promise that until that work is established in this State you will not let up on it." I made this promise and for forty-two years I have been in forestry work.

Seventy or more years ago patients suffering from tuberculosis were sent to the charcoal burnings to get cured. We did not know then that tuberculosis is contagious but even at that early date we had found that the best cure was "all outdoors."

The patients themselves thought it was the coal dust that cured; the real fact of the matter was that these men slept in cabins and the construction and condition of these cabins was such that unless weather conditions forced them to sleep in the cabins they preferred to stay out doors.

I made up my mind that there was no reason why people of Pennsylvania should die of consumption because they could not go to these charcoal burnings, while there were so many acres of land belonging to the people of Pennsylvania lying idle; so without any authority of law Dr. Pearson, my son and myself built with our own hands the first cabin that was on this ground.

If you will take the trouble to look back on the reports and maps of the work of the old health board of the State, you will find the prevalence of tuberculosis in the various counties of the State marked by a black mark and that the most infected county of the State of Pennsylvania was this county of Franklin, and next to that, Mifflin County. Yet right here in Franklin County is the first great sanatorium that has been built up for the prevention and cure wherever possible, of tuberculosis in the State of Pennsylvania. Of course we had to beg the money, but all we provided was the shelter; the patients fed themselves. After three or four years the State decided to give us a little money and they appropriated \$10,000. Then came the act creating the Department. Doctor Dixon was placed at its head and this great institution grew up under his inspiration.

I have always thought that the one thing more for us to do is this; we want to take people who do not have consumption, those who are ill but who are not actually consumptive, and we want to keep them from getting it. We want outing grounds all over this State where people can go and be re-created through this wonderful mountain air of the State of Pennsylvania. Our Legislature is a remarkable body; it is capable of doing some remarkable things and for three sessions I have introduced a bill in the hope that we might get action whereby we could have these outing grounds and make stronger men and women for the State of Pennsylvania.

I am glad to see that under the influence of your distinguished chief you are reaching back to that point; he wants to get back to the children of the State, to the weak ones of the State,—not the consumptives,—and his plan is not the cure so much as the prevention of the development of the disease in these people.

When you have reached that point you will have done the best thing that is possible in the relation of the State to tuberculosis.

LEGITIMATE PUBLICITY.

An address by James F. McCoy. Executive Secretary.

In speaking of publicity of the legitimate kind I am trying to differentiate between the so called press agent material which floods the newspaper offices and find its way to the waste basket of the News Editor and the kind which bears the earmarks of news and finds its way into the news columns of the daily newspapers.

The first rule of a newspaper office is to have something worth while to say and then say it in an interesting way; a way which will attract the ordinary reader, hold his attention and cause him to think over what he has read and be anxious to read any follow up articles on the subject. It is imperative that you approach your reader through the editorial office and look at your reading matter through the eyes of the editor. He is trained and is an expert in the technic of news presentation and it is a waste of time and of money, also of opportunity, to try any other method of procedure. The war has brought about a revolution in the newspaper world. Editorial viewpoints have been so changed, the publication of the newspaper itself has been so turned around to adjust it to the war times and conditions that presentation of news which is purely propaganda must be done with a view of converting the reader to the thought that you really have something worth while to say. The war has taught us that the dissemination of propaganda through the news columns of a publication is absolutely essential to the success of any great public movement, that is, any movement where the public is called upon to lend a hand and back up. The answer is to have some definite idea, dress it up properly but do not overdress it and then send it out so that it will attract attention and make such an impression that someone will say something about it to his neighbor and when you have once started comment you have at least gained a foothold and have an opportunity to place another shot.

The layman's idea of what is news seldom conforms to the idea of the editor. I recall an illustration given me when I was a staff man on the Philadelphia Press, by Dr. Talcott Williams, now Dean of the Pulitzer School of Journalism at Columbia University but at that time of the editorial staff of the Press. The newspapers had been filled with a most interesting controversy between President Roosevelt and James M. Beck of the New York Bar. The

President had just launched one of his characteristic shots at Mr. Beck and everyone was awaiting the come-back. Mr. Beck was scheduled for an address before the Contemporary Club of Philadelphia when he was expected to make reply to the President. I was assigned to cover the story. Mr. Beck spoke but dealt in glittering generalities and to my mind had not made much of a hit. After the speech I approached Dr. Williams and asked him for his thought. His reply was "There is no news. If a dog bites a man, that is an every day occurrence and of no interest. But if the man bites the dog that is somewhat unusual and makes good reading. Mr. Beck's speech was of the first mentioned class and gives no opportunity for news display." And so it is with the story that catches the eye of the everyday reader. Get a thing and say it in a way that no other fellow would think of and you will make a hit. There is every opportunity in the world for the Health workers of the state to fill the newspapers of their communities with real human interest news of the doing of the local health workers and tales of health conditions in their communities. The readers of the local newspapers don't care a rap for an article which says that Dr. Brown held a meeting of the Smithville Health Committee at his office and discussed conditions and then had tea. But if that committee decided to clean up a certain section of the town and gave notice that it intended going right after it, a large percentage of the townspeople will sit up and take notice and talk about it and begin to reckon with the health workers. If Dr. Martin addresses a meeting of the County Medical Society and all the news appearing in the newspapers is to the affect that he spoke no one but the doctors would be particularly interested but if the Commissioner said in his speech that he intending putting the whole force of the State Department of Health back of the Smithville committee to stamp out disease in that community and make it better and cleaner and a healthier place to live you can wager that there will be a large number of citizens in that town talking about it and willing to lend a hand.

The point is this; have something to say that will cause people to think and put it up to them so that they will want to be a part of it. The Commissioner has in mind a very extensive program and it will require a great deal of publicity to carry it right to the people. It can be done in only one way and that is by telling it in such a manner as to attract and interest and you will find you will have the support of the newspapers and the reading public.

PUBLIC HEALTH LAWS OF PENNSYLVANIA—(Discussion)—
B. F. Myers, Deputy Attorney General.

APPLICATION OF ANTI-NARCOTIC LAWS—Dr. T. S. Blair,
Chief Division of Drug Control.

LAWS AND REGULATIONS UNDER WHICH THE DEPART-
MENT OPERATES—Dr. H. L. Hull, Chief Medical Inspector.



PUBLIC HEALTH LAWS OF PENNSYLVANIA.

By B. F. Myers, Deputy Attorney General.

The things that particularly impress me about the Department of Health of the Commonwealth of Pennsylvania, are the very broad powers and authority conferred upon the Department by the people of the Commonwealth.

The Department was conceived by men of broad minds and high ideals and was organized and the work carried on by men of the same calibre, so that to-day the Department of Health of Pennsylvania is recognized as the leader throughout the United States and I am sure that under the leadership of your present chief, Colonel Edward Martin, it will continue to hold that proud position and to achieve even greater triumphs in the future than it has in the past. It has seldom been my good fortune to meet a man with the human interest that Doctor Martin has, who can and has accomplished such wonderful things in the short time in which he has been the head of this Department.

As I said at the outset, I have been especially impressed with the broad powers with the Pennsylvania Department of Health has; impressed with the idea that the people of the Commonwealth through their representatives in the General Assembly have conferred upon any one Department of the government the powers and authority which they have conferred upon this Department.

Having such broad powers and such great authority, it seems to me that the entire Department of Health, i. e. the Commissioner, his officers, agents, and employees should be particularly imbued with the great responsibility which great powers and authority carry with them. Speaking for myself personally, I feel that the Department of Health can do the greatest good for the people of the Commonwealth along the lines for which it was created by the use of that thing, which is so highly prized and so little used, called—tact.

It has been said by a distinguished public lecturer that the reason no reform government has ever been successful in the city of New York is due to the fact that it has never shown any tact, while Tammany Hall, a great political organization, uses that characteristic to a high degree.

I was very much impressed by an address Dr. Martin delivered in my town some weeks ago, in which he said that it was the aim of the Pennsylvania Department of Health to assist the people of the Commonwealth in the problems that they had to solve. He advised the local authorities to ask for advice whenever they needed it and to feel free to consult the Department at all times, and said it was the function of the agents and employees of the Department to help the people of the local communities to solve their own problems in the best possible way and eradicate themselves from the solution of such problems if possible; and he further said that he had given orders to the agents and employees of the Department to go into a community when they are called upon, give advice, do whatever was necessary to assist the local authorities, and endeavor to leave before the general public knew they had been there.

I believe that this will be the keynote of the future success of this department, so that the people of the Commonwealth will be imbued with confidence in its officers, agents, and employes and feel that the department is not coming into their communities to endeavor to force its regulations down their throats but to endeavor to show the people in the best possible way what will be for the best health of the community and of the State.

I have no idea of delivering a lecture on any subject here this afternoon as that is entirely out of my line, but I want to answer any questions relating to the legal problems with which the department is confronted.

In passing I want to tell you a few things about the 1919 law relating to communicable diseases which I understand has been or will be signed by the Governor very shortly—we have assurance that it is an administration measure and therefore the administration will be back of it.

The Act of 1905 specifically enumerated a large number of diseases which were declared to be communicable; as soon as we had an act which specifically named certain diseases as communicable and quarantinable we were precluded from making any other diseases communicable and quarantinable, that is, from declaring them so, because if we had the courts would say that the Department of Health had no authority to declare certain diseases communicable which were not set forth in that act and the Legislature clearly showed that the department would have no such authority by setting forth exactly what were communicable diseases.

You can easily appreciate that under a situation like that which arose last fall, where it might have been necessary to declare influenza a communicable disease and establish quarantine regulations, the authority of the Department of Health to do that would have been questioned.

It is a bad thing for the authority of the Department of Health to be questioned at any time because it creates in the minds of the people a suspicion that agents of the department are over-stepping their bounds and their authority. In order to remedy a situation like that and in order to put in the hands of the Department of Health—and you will notice I use the term Department of Health instead of Commissioner of Health and I use it advisedly—the authority to declare any disease communicable or quarantinable, we drafted a new bill.

We could have done this by setting forth a long list of all the communicable diseases we could think of, or rather that the officers of the Department of Health could think of, amending the act of 1905 to include those that were considered advisable; we could have repealed the Act of 1905 entirely and said that all communicable diseases so decided to be by the officers of the Department of Health shall be quarantinable under such rules and regulations as the Commissioner of Health may prescribe.

We didn't think either of these plans advisable, so we hit upon the plan of passing an Act in which we said that certain diseases or any diseases can be declared to be communicable by the State Department of Health under the following rules and regulations: The Commissioner of Health shall send notice of the time and place of meeting of the Advisory Board, which notice shall be sent at least five days

prior to the time of the meeting; this notice shall contain the specific diseases which the Commissioner desires to have declared quarantinable or communicable and at the meeting when the question is discussed if four members of the Advisory Board personally present vote in favor of declaring the diseases communicable or quarantinable, they are so declared by publishing in Pittsburgh and Philadelphia newspapers and by notices sent to all county medical inspectors, health officers, etc.

You will note that the members of the Advisory Board must be personally present and four of them must vote affirmatively, and it is impossible for the Commissioner of Health to declare certain diseases communicable and afterward have the action approved by telephone conferences with the members of the Advisory Board. At the meeting of the Advisory Board to pass upon the advisability of declaring these diseases communicable or quarantinable or both, certain of the diseases may be stricken out.

It will take from five to ten days time to declare a disease reportable and quarantinable, and this to my mind is the only objection to this bill. It may be found, in a case of great extreme, that it would be a wise thing for the Department of Health to declare a disease communicable over night, but it is absolutely impossible to have the legislature pass an Act of that kind. Outside of that objection it seems to me that by throwing these safeguards around the matter we create in the minds of the people a confidence in the Department, because they know that no disease is going to be declared communicable upon the whim of any one person, but that it can only be so declared at a full meeting of the Advisory Board and after that board have had five days opportunity to consider the matter and vote upon it.

If a disease is declared communicable the Advisory Board shall prescribe rules and regulations under which that disease shall be quarantinable, and after such rules and regulations have been properly promulgated, they shall be considered the law relating to that particular disease.

Another matter which we felt should be taken up in this Legislature was the law relating to vaccination. We found that in various vaccination campaigns the Department of Health did not have sufficient authority to enforce regulations relating to this matter and in order to give the necessary authority an amendment to the Act had to be passed. For some strange and unaccountable reason the legislature of Pennsylvania are more timid about smallpox than anything else and especially about vaccination.

When a client comes to consult me about any legal matter I like him to think that what I tell him is correct and go on that assumption; when I ask a doctor something about a certain specific disease I assume he knows what he is talking about and that what he says is true; and when the State Department of Health says that the proper preventative of smallpox is vaccination, I do not see why anyone should question it.

You cannot put the members of the Legislature in that frame of mind, however, and we found that to make any radical changes would prevent the passage of the amendment. Therefore we amended the law by inserting the provision that any one violating its provisions could be prosecuted before any justice of the peace or alderman of the county in which the violation occurred, thereby making it like other

crimes. There were a number of cases where returns of mandamus were issued against school boards in an endeavor to compel them to carry out the provisions of the law; by lack of certain provisions in the law these returns failed and we endeavored to amend the law in order to make any future returns of mandamus in order to compel any other school directors or officers to comply with its provisions, effective.

A number of other bills relating to the Department have been introduced in the Legislature during this session, some of them at the instance of the department and some without the approval of the department, and I am glad to say that we have succeeded in having all those not approved by the department killed in the proper committees and a large percentage of the useful bills approved by the department have been passed and I think will be signed by the Governor.

I have been asked by someone in the Department to explain just what is a summary proceeding. A summary proceeding is one in which a prosecution is brought before an alderman or justice of the peace. It is in the nature of a criminal complaint where the law provides that prosecution shall be brought before a justice of the peace or alderman for the violation of some law which contains a penal clause and also provides that the justice of the peace or alderman shall have authority to pass sentence after a full hearing and conviction by the justice or alderman, not by a full jury. Appeal usually lies through the court of quarter sessions but is only allowed to the defendant through the court if upon presentation of his petition the court finds that an injustice has been done.

Some have confused ideas of a proceeding in which an amount not exceeding \$5.33 is involved. That is entirely a civil proceeding. It is a matter for the collection of money and has nothing whatever to do with fine or imprisonment. If a man owes me \$10.00 and I sue him before a justice of the peace and receive not more than \$5.33 I can take no appeal. That has nothing to do with a summary proceeding and nothing to do with an appeal.

DISCUSSION.

Q. Let me state a concrete case relating to typhoid fever. It was definitely ascertained that a family living on a stream which emptied into another stream near the intake of a town water system, had typhoid fever and was the source of infection of the water supply of that town; what power would I have to compel that family to move? I visited them more than a dozen times over a period of time lasting about a week, and after a great deal of explanation and coaxing I succeeded in persuading them to move.

A. I should say you answered that question in the best possible way by the method you pursued, and I should advise that such methods be used in cases of that character, so that you may gain the confidence of the people rather than their antagonism. A week is a long time but not too long to be used in the kind of work you were doing, but you would have had authority to arrest those people if they had refused to move.

Q. What authority does the pin of the Deartment confer upon us?

A. Your pin confers absolutely no authority upon you. It is only evidence that your are an agent or employe of the Department of

Health, in other words a badge of identification. If you are instructed by the Commissioner or the proper officer of the department to do a certain thing which is provided for by law, the law confers on you the authority to do that thing. Your pin however, carries with it no authority.

Q. If I am sent out by a County Medical Inspector to investigate a case of communicable disease and am injured, would I be entitled to workmen's compensation?

A. You would be entitled to workmen's compensation but it would be necessary for you to prove that you were engaged in the business of your employer.

Q. Suppose a health officer or an employe of the Department investigated a case of communicable disease on his own volition and was injured; would he be entitled to workmen's compensation?

A. If it was part of the health officer's duty as an officer or agent of the Department of Health to investigate communicable diseases and he was injured in the investigation of such a case which he had reason to believe existed, I should say he would be entitled to compensation.

Q. Would a County Medical Inspector be authorized to put up a placard drawn by himself if he did not have and could not get official placards from the department?

A. It would be lawful for the County Medical Inspector to put up such a placard provided the placard contained the provisions of the law and the rules and regulations promulgated by the Department of Health relating to the disease. The fact that a placard is printed by the State Printer or issued by the State Department of Health or by the local health authorities does not of itself make it more efficacious than any other and I would advise Medical Inspectors to put up placards containing the provisions of the law and the rules and regulations of the Department of Health relating to communicable diseases, drawn by themselves in lead pencil if necessary, when it is impossible to get any other.

Q. If a department officer had reason to believe that a communicable disease existed in a certain house and the householder refused to permit him to enter to make an investigation, would he have authority to break open the outer door in order to ascertain whether such a condition did exist?

A. No officer of this department would have the right to break an outer door. If a householder refuses to allow him to enter his house and make an investigation, my advice would be to establish a quarantine and endeavor to persuade the man to permit an investigation. If he refused, then a warrant could be sworn out for his arrest.

Q. Should quarantine in a case of this kind be absolute or modified?

A. Absolute quarantine.

Q. Much of the work of our County Medical Inspectors has to do with the abatement of nuisances. The Act of April 27, 1905, creating the Department, provides that notices must be sent requiring the abatement of the nuisance. Would a registered letter given or sent by the County Medical Inspector acting as an agent of the Department of Health be considered as legal service or would that notice have to be delivered in person?

A. The registered letter would be legal service provided the man received it. If he did not it would be for the department to see that he had actual notice. There is no rule in the law providing for the serving of notices by registered mail.

Q. Can we do anything in a city of the third class where the City Commissioners are absolutely inactive?

A. We cannot do anything under the present law except in so far as the general public health of the people of the State is concerned, then we can go in and do whatever is necessary but only at our own expense.

Q. Can we have set aside under any circumstances the boards of health in cities of the third class?

A. Yes, but only through the courts.

Q. One of our biggest problems is the concealing of contagious diseases. I have the impression that there is nothing we can do to prevent householders from concealing cases of communicable diseases, am I right?

A. I think you are right, but if it is possible make an investigation. If a health officer of the department feels certain that a communicable disease is being concealed or exists in a certain house, my advice would be to quarantine the house and arrest the householder on sight for resisting a health officer.

Q. In the past many of our troubles with reference to communicable diseases have centered around country schools. Usually the first knowledge the County Medical Inspector has of any unusual condition is when he hears of twenty or thirty cases of a disease in a school. On investigation he usually finds that the teacher knew that the pupils were absent and that something was wrong, but was afraid to take action because of lack of support from the directors. Does the new law give us power to hold the directors responsible in cases of this kind?

A. The new law is silent on that particular matter because it gives the Commissioner and his Advisory Board the power to make regulations covering communicable diseases and states that when properly promulgated those regulations become the law for that disease. You can arrest any one for violation of that law. It holds that the directors must enforce the law and holds the teacher along with the directors. The directors could be held for the enforcement of the law collectively, and for the violation of the law individually. Any violation of the law must be prosecuted. If you want to compel a Board of Directors to enforce the law by refusing to allow children affected with communicable diseases to come to school then you will have to go into court and get a mandamus to compel them to do this certain thing.

Q. We have the case of certain diseases about the cure of which we know absolutely nothing. A man may be afflicted with one of these diseases and while we know nothing about its cure we quarantine him and deprive him of his liberty. I have in mind particularly the case of the leper who may develop the disease and show evidence of it at the age of twenty and may live for thirty years after that. The Department of Health and the medical fraternity know absolutely nothing about the cure of this disease and yet we attempt to quarantine that man. By what authority do we deprive him of his liberty for the balance of his life of, say thirty years?

A. This is a very serious question which goes right to the root of the foundation of the government, to the fundamental law, that is the Constitution.

The Constitution of the United States and of Pennsylvania provides that no one shall be deprived of life, liberty, or property except by due process of law and the right to enjoy his liberty, his life, and his property is guaranteed to him by the Constitutions both of Pennsylvania and of the United States.

The Legislature however, has conferred upon various departments of the government under the Constitution, broad powers known as police powers for the regulation of health and other matters having to do with the interests of the people at large. Under these police powers it is possible to do a great many things that otherwise might conflict with the provisions of the fundamental law. For instance, we have the Public Service Commission. The Public Service Commission can tell a public service corporation what rate it can charge, can value its property, and can almost confiscate private property for the benefit of the State.

It is under this latter police power of the Commonwealth that the Health Department functions and in view of the decision of the court I should say that for the benefit of the public health the Department of Health of Pennsylvania has the right to restrain a leper for the balance of his life, if thirty years or longer, and deprive him of his liberty and I advise the officers, agents, and employes of the department to act upon that theory and assume that that is the correct interpretation of the law until it has been demonstrated otherwise, by a decision of the courts adverse to that theory.

Q. If the Department of Health can restrain a leper why not someone affected with some other communicable disease?

A. There is no reason why it cannot and under the Act of 1919 the Department of Health after proper declaration by the Advisory Board and promulgation by the Department in accordance with the law of 1919, may restrain any one affected with another communicable disease.

Q. Are all actions brought by health officers or officers, agents, and employes of the Department of Health for violations of the law, criminal actions?

A. A criminal action is one brought for the violation of a penal statute and all of the Acts of Assembly relating to the functions of the department in which a penalty, a fine, or imprisonment is set forth to be imposed by some judicial officer for violation of the act are penal acts.

THE APPLICATION OF THE ANTI-NARCOTIC LAWS.

Dr. T. S. Blair, Chief of Bureau of Drug Control.

Whenever I see a confirmed drug addict, I cannot help but think of Kipling's "great, gray, green, greasy Limpopo River," a dismal place you have heard about; or I might think of the Dismal Swamp, of Georgia, or the Everglades of Florida, the two most forsaken places I have ever seen; or the "Bad Lands" of Texas or Arizona—arid, unproductive, desolate places to live. But when I think of what is worse than the drug addict, the man who is making the addict, I recall that bit of poetry that runs something like this: "To-morrow, and to-morrow, and to-morrow take their slow course from day to day to the last interval of our recorded time; and all our yesterdays we've been but leading fools the dusty way to death." And if that is not what that man or woman is doing, I am at a loss to say what he is doing.

Yet you as physicians and nurses must meet human nature as it is, with all its weakness and frailties, with all its sorrows and pains. While we realize that alcohol, opium, and cocaine have their bad use, they have their good use as well and it is the province of the physician to use them wisely and not too freely.

The use of drugs goes back three thousand years to ancient Egypt, and in all that period there has not been a time in which the physician could get along without the use of drugs. Therefore, I doubt very much whether it will ever be possible by human law to eliminate this agent.

I doubt whether any regulations can be passed to say that when you physicians have a cancer patient who is suffering the torments of the damned, that you cannot give him morphine. Every one of you know what a blessing morphine has been in many of these cases. You know what a terrible thing cardiac dyspnea is. It can usually be relieved without the use of drugs but cases occur which you cannot relieve without hypodermic morphine. When you have a patient passing a kidney or gall stone and you see him suffering and can give him relief, humanity demands that you give him that relief. Consequently, the laws were not intended to mean that when you meet these desperate cases in your practice you may not give them relief.

If you read the text books you will find these remedies listed for emergencies such as shock, extensive burns, and other conditions in which something must be done, and done quickly to meet the indications in these cases. And the surgeon with the patient on the table going under the anesthetic is facing the choice of the life or death of that patient and if he does not use drugs the patient will die. So first of all, these agents must be used as emergency remedies.

There are a great many uses given for narcotics. The books will speak of the use of morphine in the gastric crises in locomotor ataxia, and in syphilis but that does not mean that all cases of tertiary syphilis are to have morphine as long as they live. The books tell you that you must use these drugs in the early stages of pneumonia, but it does not mean that when an influenza epidemic strikes

your community you are to give heroin to every case or suspected case. However, heroin, acetanilid, and aspirin may all be used with discretion and care. The American Medical Journal gives the dose of acetanilid as $1\frac{1}{2}$ grains for three or four doses.

The literature of the Public Health Service gives the dose of heroin as zero. It has done a million times more damage than good. There is no necessity for its use when we have codeine and morphine. The biggest sellers during the epidemic were elixirs containing heroin and codeine. We are facing to-day literally hundreds of heroin addicts produced during the "flu" epidemic, when these elixirs were sold without restriction because there was nothing in the law to stop them. And there are hundreds of people taking them regularly every day of their lives, especially the heroin elixirs. You gentlemen know that while it may be useful in some cases for a limited length of time, it is not useful for any period of time.

You all know somewhat of the Federal Law, but you may not know that within the last few days the Federal Law has had teeth put in it which it lacked. The most powerful man in the country is the Secretary of the Treasury, as witness this: "The Act of December 17, 1914, as amended by the Act of February 24, 1919," a new regulation states "permits the furnishing of narcotic drugs by means of prescriptions issued by a practitioner for legitimate medical use, but the Supreme Court has held that an order for more than used by an habitual user thereof not in the course of professional treatment in an attempted cure of the habit, but for the purpose of providing the user with more than sufficient to keep him comfortable by maintaining his customary use is not a prescription within the meaning of the act."

In view of this decision, the writer of such an order, the druggist who fills it, and the person obtaining drugs therein will all be regarded as guilty of violating the law.

The Government is going to push this Act as far as possible. It is going to hit the druggist.

It is unnecessary for me to go into the requirements of the Federal Act for you know it. But I wish to state that in going over the State and inspecting physician's offices I find that not one-third are observing the Act. They take advantage of the fact that they are busy, and they do not record in their offices the routine administration of narcotic drugs. It is rare to find a record in a physician's office that means anything at all.

The Federal Act and the Pennsylvania Act require the same records and the Federal people are very much more apt to get you into trouble than the State is. Physicians will have to be careful to keep their records according to law. When one writes for 500 fourth grain morphine pills for a patient, the Government will want to know the reason why. Now, that patient may be over two mountains away from the doctor, way off in some place hard to reach, and he is sixty or sixty-five years of age and he is slowly dying; and the family is going to have a hard time if they do not have those pills. We know that in Pennsylvania and make allowances, but the Federal authorities may not.

We have, of course, the pure addict, addicts with disease, and addicts with incurable diseases. The State is full of old chronic cases which are untreated because we have all kind of doctors. Then we have patients with incurable diseases. There is the sad part of it.

A couple of days ago, I saw a young man who had hay fever and he developed asthma. He went to one of those busy doctors who attends everything in his community but the Medical Society. The doctor started this young man on morphine, and to-day that young man, with his father and mother are wishing he were dead. The addiction which is grafted on to the disease is more dangerous than the disease itself. To-morrow we are going to arrest a certain doctor who does not have a medical degree and who has been sending large quantities of morphine to that young man without having ever seen him.

I cannot understand why it is in theology and in medicine, and I studied both, that the highest ideals should be maintained, and that intellectual dishonesty has a premium tacked on it.

It is perfectly surprising to know the number of doctors and dentists and their wives who are regularly addicted to narcotic drugs themselves. Indeed the situation is so bad that while we have taken licenses away from some of them, there are some poor fools who do not realize that they are going down the morphine route. They are a drag to the profession and a menace to their community.

If you have a doctor in your community who is a drug addict, take an interest in him and you may be able to save him from the slough of despond and the path of iniquity and degradation he is following. We need the doctors, and we need to bring them back.

One of the things I want to speak of is proprietary medicine. You would be utterly amazed if you went into a factory and saw eleven tons of a certain drug in one bin. I believe that one firm uses a great deal more hydrate of chloral than the whole medical profession. I have seen nineteen cases of bromidia addiction. I went into court at one time to break a man's will because of this addiction. To-day only about twenty per cent. of the drugs brought into this country and sold go into legitimate prescriptions and the difference between the patent medicine and the proprietary medicine business is like "tweedle dum and tweedle dee."

Let us use our drugs rationally, and stop throwing stones at the pharmacologist. Until we do, drugs will not be the useful thing that they could be and ought to be.

Now as to the nurses:—You women see a great many patients that the doctor sees but casually. You learn things about that patient. One nurse told me—in the case of a woman who had once been cured of the drug habit but is now getting drugs from an osteopath—"I did not want to tell the attending physician." When you find such conditions it is your religious duty to tell the attending physician.

Now as to the Pennsylvania Law: We sent copies of it to the whole medical profession in Pennsylvania, and I hope some of you read it. The second pamphlet is a comparison between the Federal Act and the Pennsylvania Act.

First of all, the Pennsylvania Act is effective because of the police power of the State. The Federal Act does not have police power in Pennsylvania or in any other State except in inter-State transactions. Under the Federal Act a man can be arrested for the mere possession of drugs, but the Pennsylvania Act goes farther than that.

We have sent out word to the physicians warning them to reduce the quantity of narcotic drugs used. They promise to reduce the doses, but they have not done so.

What the doctor does not know is this;—two-thirds of those people are not taking the drugs themselves. The medical profession is one of the many sources of supply for the drug peddler. There are people who come into your office and represent themselves as drug addicts and get your sympathy. They then go from one doctor to another for prescriptions, and we discover this when the druggists reports come in. There is the man who will persist in ordering large quantities, like one old man who orders 15½ ounces of morphine every month. We will have to take his license away from him. Another doctor whose license we had to take away was one who received stolen goods in exchange for morphine. He does not know that a State policeman was one to whom he sold morphine the other day.

I want to ask you men who are influential in your communities to say to the doctors in your district "Have you answered those blanks sent to you by the Department of Health? Didn't you get some literature from the Department of Health last February? You had better fill them out and send them to Harrisburg because they might lose patience with you and make trouble." This is the only paper we are asking the medical profession to fill out.

The statistics we have gathered for the first six months show the prescribing of anywhere from ten grains of codeine up to perfectly colossal quantities of morphine, and we would like to estimate what is the normal, reasonable amount for a practitioner in the country and in the city. We wish to get statistics and to know doctors' purchases. It is from the druggists' cards that we get our information. It is the patient's name, the doctor's name, and the amount that we want, so that when we wish to know what a certain person is getting, we have only to look at these cards. If we find a man getting an excess of drugs we report him, and perhaps send him a form letter.

Letters come in from doctors regarding the drug addicts who are aged. You need to find the half fed, half cared for, old people who are often times suffering from something or other, and who go to a cheap doctor. Before anybody knows it they are drug addicts.

Another surprising thing is that the proportion of drug addicts is greater in the small places than in the large ones. Philadelphia and Pittsburgh do not rate as high as smaller communities. The Federal authorities do not follow up small places but we are going to do it, and we are hoping to have your help and aid in every possible way.

We list these drug addicts, and their names are kept on file: and while doctors were previously required to report these drug addicts there were only twenty-two reported voluntarily. Doctors will report a case of smallpox, but often will not report the case of an addict. But we look these people up and write to the doctors.

If a physician has a case that must have morphine, let him report the case to us, so that if the Federal authorities get busy, he may say that patient is a registered drug addict with disease. Of the eleven thousand doctors we have in Pennsylvania, only a few are giving trouble.

I hope that you won't think I am just a policeman. I have to do some police work, of course. I have practiced medicine for thirty years and know what physicians are up against. So when you doctors have trouble with these patients let us know and we will try to alleviate it.

LAWS AND REGULATIONS UNDER WHICH THE DEPARTMENT OPERATES.

By Dr. H. L. Hull, Chief Medical Inspector.

I want to talk to you for a little while this morning about the laws under which we are working.

Act 218 is the law creating the Department of Health. We are not a Board of Health, we are a department; the State Department of Health was created by Act 218, under the administration of Governor Pennypacker, April 27, 1905.

Section 1 provides for the appointment of a Commissioner of Health, who shall be a physician of at least ten years' professional experience and a graduate of a legally constituted medical college, and who shall be appointed by the Governor and confirmed by the Senate.

Section 2 provides the salary of the Commissioner.

Section 3 defines the Advisory Board, which shall consist of six members, the majority of whom shall be physicians of at least ten years experience in the practice of their profession and one of whom shall be a civil engineer. The present advisory board consists of four physicians, one veterinary surgeon and one civil engineer. The members of the advisory board are appointed by the Governor and serve for four years.

Section 4 states that three members of the advisory board shall constitute a quorum and further states that no member of the board shall receive any salary.

Section 5 states that meetings of Advisory Board shall be at the call of the Commissioner of Health, at such place as he may designate.

Beginning at section 6 the powers of the Commissioner of Health are detailed at great length, and you will notice this section gives the commissioner very broad powers. Colonel Martin has told you how important it is not to abuse these powers. Section 6 provides that the commissioner may employ such clerical and other assistance as are necessary for the performance of the work of the department and that he may distribute appropriate powers and duties to employes of the department not inconsistent with the Constitution or the laws of the State.

Section 7 states that he may employ such other competent persons as he may need, from time to time, for work along special lines and that he may purchase such supplies and materials as may be necessary for carrying on the work of the department. He may issue subpoenas to secure the attendance of witnesses; he may issue warrants to any constable, sheriff, or policeman to apprehend and arrest persons who have disobeyed the quarantine orders or regulations of the Department of Health.

Section 8 is what we call the blanket clause of the law, under which the commissioner may take any measure necessary to control disease. In 1916, during the infantile paralysis epidemic, the powers conferred by this section of the Act were exercised and the State was placed under strict quarantine.

Section 9 gives the commissioner power to order nuisances, which are detrimental to the public health, abated and removed and to enforce quarantine regulations. It further states that if the owner or occupant of any premises on which a nuisance exists fails to comply with the order of the commissioner and to abate or remove the nuisance, the commissioner or his agent may enter upon the premises and abate or remove the nuisance and the expense of such abatement or removal shall be paid by the owner or occupant of the premises or by the person who caused or maintained the nuisance, and such expense shall be a lien upon the land upon which the nuisance was maintained. A proviso at the end of this section states that this Act shall not apply to water pumped or flowing from coal mines or tanneries.

Section 10 states that it shall be the duty of the commissioner to have general supervision over the registration of births, deaths, marriages, and disease, and that he shall prescribe and prepare the necessary methods and forms for obtaining and preserving such statistics and secure their prompt registration in a Bureau of Vital Statistics, which shall be maintained as a part of the department.

Section 11 authorized the dividing of the State into ten districts for the registration of vital statistics and the proper management of sanitary affairs in different parts of the State, and the appointment of a health officer to have supervision and control over such matters in each district, such health officer to be a physician with at least five years experience, a graduate of a legally constituted medical college, a resident of the district which he represents, and to receive a stipulated salary set forth in this section of the Act. The appointment of these health officers is to be made by the Commissioner of Health and the work in each district is to be carried on under his supervision. This work of dividing the State into districts has never been done. It may be done in the future. The law does not say that the commissioner must do it but that he may do it.

Section 12 gives the Commissioner of Health power to revoke or modify any order, regulation, by-law, or ordinance of a local board of health concerning any matter which affects the public health beyond the territory over which such local board has jurisdiction.

Section 13 provides that the Commissioner of Health must make an annual report to the Governor.

Section 14 states that the commissioner, in addition to the powers conferred by this act shall have all the powers conferred and perform all the duties heretofore imposed by law on the State Board of Health or any member, committee, or officer thereof.

Section 15 provides that rules and regulations of the department shall be promulgated by sending copies to all local boards of health, school boards, clerks of councils of cities and boroughs, and by printing once a week for two weeks in at least one daily paper of Philadelphia and Pittsburgh, and that the rules and regulations shall be printed in circular form and given to anyone who demands them.

Section 16 provides that a penalty consisting of a fine of not more than one hundred dollars or imprisonment not exceeding one month, or both, at the discretion of the court, shall be imposed upon any person who is found guilty and convicted of violating any of the orders or regulations of the Department.

Act No. 268 entitled "An Act to Safeguard Human Life and Health throughout the Commonwealth, by providing for the reporting, quarantining, and control of certain communicable diseases, and for the prevention of infection therefrom, and prescribing penalties for violations of the act" will be supplemented this year by a new act which declares that the Commissioner of Health shall have authority to determine, with the advice and consent of the advisory board, what diseases are communicable and what ones shall be made reportable, subject to quarantine, or both. It gives the same list of diseases as is given in section 1 of Act 268 and states that the physician shall forthwith make a report of the existence of a case of any one of the diseases mentioned; This report must be in writing. The new law is worded the same way as the old, i. e. "that every physician who shall treat or examine, etc." This gets the man who tries to escape reporting and quarantining his cases.

Section 2 sets forth the method of quarantine and the diseases which are quarantinable. You will note that trachoma is reportable but not quarantinable, also that tuberculosis is reportable but not quarantinable. By our new law it may be subject to quarantine.

Section 3 contains the regulations regarding placarding and disinfection.

Section 4 gives the quarantine periods prescribed for different communicable diseases.

Sections 5 and 6 refer to exclusion from places of amusement, public gatherings, places of business, churches, schools, etc. of any child or person suffering from a communicable disease and gives the period of such exclusion and the duties of public school teachers and teachers in charge of private, parochial, and Sunday schools, in relation to such exclusion.

Section 7 refers to exclusion from places of amusement, public gatherings, churches, schools, places of business, etc. of persons residing on the same premises with a subject of contagious disease.

Section 8 refers to the admission to school, etc., of a child or person residing on same premises with a subject of contagious disease, after certain conditions have been complied with.

Sections 9 and 10 are the two most important sections of the law for school teachers; they are sections that every school teacher ought to be required to know in order to get a certificate to teach school. These are the sections dealing with the exclusion from any school of any child showing an unusual rash or skin eruption; or complaining of soreness in the throat; or having symptoms of whooping-cough; or any disease of the eye; and the reporting of such fact to the health authorities and to the health officer of the city, borough, or township, with information giving name and residence of such child or other person; and the continued exclusion of such child or other person from school until such time as a certificate shall be furnished, signed by a person designated for that purpose, setting forth that the conditions for such readmission prescribed by this act have been complied with.

Section 11 states that the blanks on which to make reports shall be supplied by the Health Department. We do not supply to Boards of Health blanks upon which the doctors render reports to the board. We expect each local board of health to supply its own placards. We do supply the blanks upon which they are required to render

reports each week; we must have a positive or negative report each week and we furnish those blanks for reporting.

Section 12 has to do with the duties of health authorities in cities, boroughs, and first class townships and states that they shall furnish daily to persons in charge of public, private, parochial, Sunday or other schools, a written or printed report containing the name, location, and disease of any person suffering from any of the diseases mentioned in sections 5 and 6 of this act. This is not very thoroughly carried out except in places where the Board of Health is very efficient and very careful.

Section 13. In this section there is something I wish to call particularly to the attention of the nurses. This section sets forth that "upon the removal to a hospital or other place, or upon the discharge by the recovery or death of any person or persons who has or have suffered from tuberculosis or any of the diseases mentioned in section two of this act, all premises which have been occupied by the said person or persons while suffering from any of the said diseases shall be fumigated and disinfected, or destroyed, at such time and in such manner as may be authorized and required by the health authorities.

Section 14 prohibits any person or persons suffering from a communicable disease from traveling in any kind of hired or public conveyance; it also prohibits anyone who has charge of the persons so suffering from entering any hired or other public conveyance, without previously securing the consent of the health authorities and notifying the driver or owner of such conveyance of the existing condition; the owner or driver of the conveyance shall arrange for the disinfection of such conveyance under the direction of the health authorities immediately after it has been used for any such purpose. No person suffering from a communicable disease may be moved from one place to another without the permission of the local board of health of both the town in which he is and the town to which he is to be removed. If it is in a township he must not be moved without the knowledge of the County Medical Inspector. This is very frequently violated but we are going to follow it up.

Section 18 empowers local health authorities to make additional rules and regulations covering local conditions, provided they do not interfere with the State laws. For instance, a local board cannot make a rule quarantining measles fourteen days; they may quarantine for eighteen days, but not fourteen. Sixteen days is required by the State law.

Sections 19, 20, 21, 22, 23 and 24 have to do with burial preparations and funeral services of persons dying from certain diseases. The new regulation of the advisory board adds measles, mumps, German measles and whooping cough to the list of diseases for which a private funeral is required. Section 20 states that burial must take place within 36 hours, unless special permission be granted by local authorities.

Section 25 requires that local health authorities shall send weekly reports to the Department of Health, upon blanks supplied for that purpose, showing all cases of communicable diseases which have been reported to them during that period.

Section 26 describes the penalty for violation of any part of this act, and provides that any person who shall remove, deface, cover

up, or destroy, or cause to be removed, defaced, covered up, or destroyed, any placard relating to any of the diseases mentioned in section two of this act, shall, for every such offense, upon conviction thereof in a summary proceeding before any magistrate or justice of the peace of the county wherein such offense was committed, be sentenced to pay a fine of not less than ten dollars or more than one hundred dollars, or be imprisoned in the county jail for a period of not less than ten or more than thirty days, or both, at the discretion of the court. It further provides that any person, other than the attending physician or trained nurse, who shall enter or leave any quarantined premises without having secured permission from the health authorities, or who shall violate any of the quarantine restrictions of this act, or who shall interfere with a health officer or any other agent of the Department of Health or any local board or department of health in the discharge of his official duties in the placarding, quarantining, disinfecting or releasing from quarantine of any premises, or in the investigation of any alleged case of a quarantinable disease, shall, upon conviction thereof, be sentenced to pay a fine of not less than \$50.00 or more than \$100.00 and costs of prosecution, or be imprisoned in the county jail for a period of not less than ten or more than thirty days, or both, at the discretion of the court. This section further provides that any physician, undertaker, teacher of a public school, principal of a school, superintendent of a Sunday school, sexton, janitor, parent, or guardian, or any other person who shall fail, neglect or refuse to comply with, or who shall violate any of the provisions of this act, shall upon conviction be sentenced to pay a fine of not less than twenty dollars or more than one hundred dollars and cost of prosecution, or be imprisoned in the county jail for a period of not less than ten or more than thirty days, or both, at the discretion of the court.

Interference with a health officer is a serious matter, and constitutes a violation of the law. You have the powers of the Commissioner of Health by reason of being his deputy. Every one of you has authority under the department to enforce the various regulations. Interference, which according to the Attorney General's office consists not necessarily in physical interference, but simply refusal to comply with orders, can be prosecuted under ordinary circumstances.

You all have copies of Form 17, the little reference pamphlet for matters pertaining to quarantine. Our County Medical Inspectors are familiar with this pamphlet as it is something with which they have to become familiar in their daily work.

The Board of Health Law is the next to which I want to call your attention. This law was amended in 1915, but it has been a sort of "thorn in the flesh" with us and we hope the next Legislature will be able to give us something better.

Section 2 gives the make-up of a board, how it is appointed, etc. The law requires that at least one member of the board shall be a physician, and in boroughs where there is no physician the only thing to do is to have a Board of Health with one vacancy. They can call in an outside physician when necessary. The members of the board must be residents of the community or township, if it is first-class, where the Board of Health exists. Boards of Health in first-class townships more nearly approach the standard we want than do

those in boroughs. On these boards we have men from different communities and they all get together and work for the good of all the people. The result is that we get better results from boards of health in first-class townships than we do from those in boroughs.

Section 3 provides that the members of the board shall take the oath of borough or township officers; that they shall organize each year, electing a president, a secretary, who may or may not be a member; and a health officer who must not be a member. Many of the inquiries that come to us from our County Medical Inspectors would be answered if they took up the Board of Health law and read it thoroughly.

Section 4 covers the duties of the secretary. The secretary is required by law to render reports each week and for the fraction of the week at the end of the month. These reports must be sent on the 7th, 14th, 21st, 28th, and at the end of the month. If there is nothing to report they must send in a negative report.

Section 5 deals with the duties of the health officer. He shall placard and quarantine cases of communicable disease, disinfect the premises upon expiration of the quarantine period, serve notices requiring exclusion of children from school, make sanitary inspections, abate nuisances, and the section ends with the statement "and shall execute the orders of the board of health and shall in the performance of his duties have the power and authority of a policeman."

The trouble with many local boards of health is that, although they have very large powers, they do not use these powers through fear of offending somebody.

Section 6 gives the powers of local boards of health in detail, and states that it shall be their duty to enforce the laws of the Commonwealth, the regulations of the State Department of Health and to make and enforce such additional rules and regulations to prevent the introduction and spread of infectious or contagious diseases as they shall deem necessary for the preservation of the public health. This section further states that they shall have power, with the consent of councils or townships commissioners, to erect one or more emergency hospitals and make provisions and regulations for the maintenance and management of such hospitals, when necessity arises. They also have power to make additional rules and regulations provided they do not conflict with the State health rules and regulations, and to enter any building for the purpose of making investigations.

Section 8 covers the inspection of nuisances, orders of abatement, etc. Section 8 is authority by which a board of health can clean up a borough if it wishes to do so. You are all familiar with this act. Get after the local Board of Health; get a civic club and local citizens back of them and you can accomplish anything you start after.

Section 9 covers the duty of the board of health to submit an annual budget and report to councils.

Sections 10 and 11 have to do with the powers and duties of the Commissioner of Health in connection with local boards. In case the Commissioner of Health finds in any borough or township of the first class, conditions which are menacing to public health, he can take over affairs in that borough or township and administer them at the expense of the borough or township.

Section 12 covers the payment of expenses incurred by the Commissioner of Health in the administration of health laws in any borough or township of the first class, and provides that should such bill remain unpaid for a period of over three months after the statement has been rendered, he shall, with the approval of the Governor, institute proceedings against such borough or township of the first class, for the collection of such bill.

Section 13 provides that monies received from this source shall be turned over to the State Treasurer and not to the Health Department.

Act 281. I shall not stop to go over this act, which has to do with the medical inspection of people employed in restaurants, dining cars, and public eating places. Mr. Ness has charge of that work and he will be here and speak to you about it.

There are many other regulations which could be mentioned and each one of you should have a copy of the laws of Pennsylvania relating to public health. I wish to go over briefly with you the new regulations of the Advisory Board; these are now being promulgated and I have had made carbon copies for the County Medical Inspectors.

First we have a resolution requiring private funerals for persons dying of mumps, measles, German measles, and whooping cough.

Second, a resolution authorizing the placarding and quarantining of contacts of certain communicable diseases.

Third, fixing a maximum period of incubation for various diseases.

Fourth, changing the method of disinfection for certain diseases. This does away with gaseous disinfection for certain diseases. Smallpox, diphtheria, and scarlet fever are not included among these diseases.

REGULATIONS OF ADVISORY BOARD. (With the effect of law.)

Approved June 6, 1919.

Requiring private funerals for certain diseases in addition to those mentioned in Section 19, Act of May 28, 1915.

All services held in connection with the funeral of the body of any person who has died of measles, mumps, German measles, and whooping cough shall be private and the attendance thereat shall include only the immediate adult relatives of the deceased, who may at the time not be under absolute quarantine restrictions, and the necessary number of adult pallbearers; and any advertisement of such funeral shall state the cause of death.

The body of a person who has died of any such disease shall not be taken in any church, chapel, public hall or public building for the purpose of holding funeral services.

Regulation authorizing the placarding and quarantining of contacts of certain communicable diseases.

Where persons are known to have been exposed to diphtheria, scarlet fever, or smallpox, health authorities may, when in their opinion it is necessary, placard and quarantine the premises, using the following form for the placard:

WARNING—SCARLET FEVER: (DIPHTHERIA; SMALLPOX).

An inmate of this house is known to have been exposed to scarlet fever (diphtheria, smallpox) and is required to remain on the premises until released by the health authorities."

Regulation fixing the maximum period of incubation for certain diseases.

The maximum period of incubation (between the time of exposure to the disease and the date when its development might be expected), of the diseases mentioned below shall be as follows:

Acute poliomyelitis (infantile paralysis),	14	days.
Chicken pox,	16	"
German measles,	14	"
Measles,	14	"
Mumps,	21	"
Scarlet fever,	7	"
Smallpox,	18	"
Diphtheria,	5	"
Whooping cough,	14	"
Typhoid fever,	21	"

Regulation of Method of disinfection to be followed after certain diseases.

At the termination of the quarantine period or upon death or removal of a case of anterior poliomyelitis, German measles, glanders (farcy), measles, mumps, typhoid fever, paratyphoid fever and whooping cough disinfection shall be performed as follows:

The room or rooms occupied by the patient shall be subjected first to a mechanical cleansing followed by application of a solution of one to one thousand bichloride of mercury (corrosive sublimate) or a solution of two teaspoonsfuls of creolin to a gallon of water.

When the health officer establishes quarantine on a premises for any of the above mentioned diseases, he shall fully instruct the householder regarding the requirements to be observed by all persons under quarantine, and shall advise him of the date upon which quarantine may be raised if no further cases develop. He shall direct that when the quarantine period has expired the householder shall proceed to cleanse and disinfect the room or rooms occupied by the patient, according to the circular on sanitary cleaning which the health officer shall furnish to the householder.

At the termination of the legal quarantine period or upon death or removal of the patient the health officer shall visit the premises and if he finds that the sanitary cleaning has been accomplished as required, he shall remove the placard and terminate quarantine."

Summary of 1919 Legislation Relating to Public Health

(Requests for copies of Acts should be addressed to the Secretary of Commonwealth).

Act No. 165.—Amending an Act, to establish schools for tubercular children and providing food, clothing and transportation.

Act No. 276.—Discontinuing the State Quarantine and abolishing all offices connected therewith. Books, records, etc., to be transferred to the State Department of Health; real and personal property to be transferred to the Department of Public Grounds and Buildings. Property may be leased or sold to U. S. Government, provided they agree to use it as a place of inspection.

Act No. 253.—Amending an act, to establish Medical Inspection in public schools. The names of the inspectors must be reported to Health Department. Upon failure to make such inspection notice must be sent to the Commissioner of Health.

Act No. 166.—Amending a law and, providing that Boards of Health for third-class cities be created by *the city council*. The *city clerk* shall *not* be *ex officio Secretary of the Board of Health*.

Act No. 191.—Creating the office of Deputy Commissioner of Health, stating his salary, duties, etc.

Act No. 136.—Authorizing the erection of joint County and City Hospitals. Providing the selection of site; power or condemnation; providing for contracts and agreements to be entered into by county and city; issuance of bonds for certain purposes; adoption of plans and specifications, rules and regulations, equipment, personnel, etc.

Act No. 198.—Amending a section, providing for the vaccination of school children. Child to be barred admission to school upon failure to present a signed certificate. Penalty for admitting unvaccinated children.

Act No. 271.—Amending an Act, to establish Medical Inspection of Schools. Annual Inspectors in 1st, 2nd, 3rd and 4th class districts. Parents or guardians may be present; annual inspection of teeth. Inspectors required to make written reports to persons in charge.

Act No. 91.—An Act to regulate practice of pharmacy and sale of poisons and drugs, and providing a penalty; appointment of board which shall have in charge the enforcement of said law.

Act No. 68.—Providing for biennial instead of annual reports by the several departments of the State Government.

Act No. 325.—An Act to protect the health of persons employed in bakeries by requiring ventilation, drainage, sanitation and purity of bakeries, the cleanliness of persons employed therein and of all bakery products, tools, ingredients, etc., used in connection with their manufacture, delivery and sale.

Act No. 173.—Providing for the granting of certificates to practice medicine and surgery to certain persons who served in the Army and Navy of the United States upon proof that he possesses the necessary qualifications.

Act No. 278.—Defining cold storage, regulating time of storage of certain articles of food, and providing penalties. License compulsory.

Act No. 264.—Providing for State Registration of Nurses, to establish a State Board of Examiners in connection therewith and providing penalties.

Act No. 97.—Regulating the Practice of Veterinary Medicine and Veterinary Dentistry; establishing a State Board of Veterinary Medical Examiners and defining its powers and duties. License to practice Veterinary Medicine compulsory.

Act No. 146.—Regulating the weighing, testing, buying and selling of milk and cream; providing for certified testers, issuing licenses; use of Babcock test; and providing penalties.

Act No. 270.—An Act for the Government of cities of the second class. Authorizing the regulation and limit of height and bulk of buildings, areas of yards, etc., to divide city into districts and providing regulations and restrictions, etc.

Act No. 147.—Providing for appointment of County and City Inspectors of Weights and Measures; prescribing their duties, providing compensation, etc. Providing for use of Babcock Test.

Act No. 143.—Prohibiting the sale, offering for sale, etc., or having in possession with intent to sell of eggs unfit for food and providing penalties.

Act No. 164.—Requiring foundries to be provided with toilet-room and water-closet; as amended, by extending these provisions to rolling mills, boiling mills, heating mills and finishing mills.

Act No. 194.—Amending Section 4, stating the qualifications necessary to practice pharmacy and the sale of poisons and drugs.

H. R. Bill 260.—Establishing a Commission to investigate sickness and accident not compensated under the Workmen's Compensation Act.

H. R. Bill 974.—Prohibiting the sale, offering for sale, exposing for sale or having in possession with intent to sell, of adulterated or deleterious sausage.

H. R. Bill 720.—Appropriation to Health Department for maintenance of Tuberculosis Sanatoria, dispensaries, necessary additions for educational work and other necessary work in curing and preventing tuberculosis.

H. R. Bill 1055.—Modifying method of reporting mentally or physically defective school children by placing duty or reporting upon County Superintendents rather than upon Medical Inspectors, as is at present required.

H. R. Bill 1642.—*Department's Bill* for reporting, quarantine and control of communicable diseases.

H. R. Bill 680.—Prohibiting third-class cities to keep or slaughter horses, cows, calves, swine, sheep, goats and any other animal or fowl deemed objectionable by the Department of Health.

H. R. Bill 941.—Relating to eggs that are not branded or labeled as fresh. Prescribing certain duties of the Dairy and Food Commissioner.

Senate Bill 996.—Establishing of a Bureau of Rehabilitation in the Department of Labor and Industry and authorizing same to supervise and direct the rendering of physically handicapped persons fit to engage in a remunerative occupation.

Senate Bill 606.—Regulation of employment of women and children in all kinds of industrial establishments.

H. R. Bill 497.—Prohibiting advertisements relating to the treatment of diseases of the generative organs.



ENGINEERING.
(Including housing).

**THE ENGINEERING DIVISION; ITS CORRELATION WITH
OTHER DIVISIONS—**(Discussion)—C. A. Emerson, Jr.,
Chief Engineer.

WATER AND WATER WORKS (Discussion)—C. A. Emerson, Jr.,
Chief Engineer.

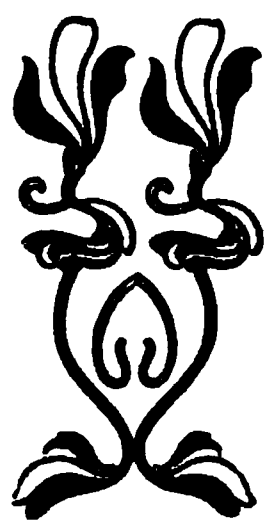
GARBAGE AND GARBAGE DISPOSAL—C. A. Emerson, Jr., Chief
Engineer

TYPHOID CONTROL—C. A. Emerson, Jr., Chief Engineer.

THE ABATEMENT OF NUISANCES (Discussion)—C. A. Emerson,
Jr., Chief Engineer.

**SEWERAGE, SEWAGE TREATMENT AND THE DISPOSAL OF
EXCRETA IN RURAL DISTRICTS** (Discussion) W. L.
Stevenson, Assistant Chief Engineer.

HOUSING SURVEYS AND HOUSING LEGISLATION (Discus-
sion)—John Molitor, Chief of Bureau of Housing—Engineer
Division.



THE ENGINEERING DIVISION—ITS CORRELATION WITH OTHER DIVISIONS.

C. A. Emerson, Jr., Chief Engineer.

Let us consider the word "engineer"; it is a broad term, perhaps as broad as the term "doctor" or "professor." The man that worked the throttle on the train that brought you here was an engineer, the man that designed the tunnel under the river leading to New York City was an engineer, so also he who designed the great electric power plants flashing light to the great cities; again the man in the little shanty on the curb at the foot of every big building being erected, who stands there all day jerking the little lever back and forth that pulls the car carrying mortar to the top of the building—he is an engineer. Then there is another class of engineers; in fact the last class is divided into two species; one is located in every city in the Commonwealth and on one side of his office door are the words "registered plumber," and on the other "sanitary engineer." Making up the other species are those individuals who have spent four or more years studying water and sewage purification in technical schools; we hope the Engineering Division is made up of this second class rather than of plumbers.

The division was organized in 1905. At that time it consisted of a Chief Engineer, one assistant engineer, and a combination clerk and stenographer. It has steadily grown until now it includes about seventy-five permanent employes, all supposedly trained people, and is supplemented from time to time by a large number of temporary employes. The division is divided into a number of sections for ease in administration, each section being in charge of a chief, who reports to the Chief Engineer or to someone designated by him.

The first section, the Waterworks and Sewage Section, the one in which you are the most interested, has to do with the administration of one of the fundamental laws of the Department, the Act of April 22, 1905, the full title of which is "An Act to Preserve the Purity of the Waters of the State, for the Protection of the Public Health."

This is known as the "Purity of Waters Act," and requires every corporation or municipality desiring to construct a new waterworks or sewerage system to transmit plans to the department and secure a permit from the Commissioner of Health before undertaking work. These permits contain stipulations and conditions necessary to protect the public health. From the first of October 1905 to the middle of June of this year, over 3,100 permits had been issued. The procedure is something like this: The application comes in from the corporation or municipality, is assigned to an Assistant Engineer who goes over the plans in the office and then makes a study in the field, making a full written report with recommendations to the Chief Engineer and the Commissioner of Health. Some people seem to think that waterworks or sewage permits are as easy to obtain as automobile licenses, but that isn't the case.

Another important work of the Waterworks and Sewerage Section is the maintenance of waterworks and sewerage systems now in ex-

istence in the State, including water purification and sewage treatment plants. There are 136 water filtration plants and 290 sewage treatment plants in Pennsylvania, and there are over 4,000,000 people in Pennsylvania obtaining filtered water.

Every water filtration plant is necessary and it all means that instead of polluted water these people are obtaining a pure and wholesome supply. But filter plants have to be constantly and properly maintained and constant supervision is absolutely necessary. Whenever a filter plant breaks down the people of that municipality are worse off than if they had no filter plant.

Assuming that an application comes in,—as they do at a rate of about fifteen a month,—for the installation of a new or the extension of an old sewerage system; the Assistant Engineer goes over the plans and in his report, if it is only a plan for a sewer on one or two streets, recommends that that town be required to submit plans for a comprehensive system covering the entire municipality.

In small towns it may seem foolish at first to require a sewerage system for the whole town. The reason is this: Some large manufacturing concern may come along, some big real estate development, or some other sudden growth may come to that town and if the sewers are put in for the present needs only, in ten or twenty years the town may have to put in a new system. Therefore, the Department feels that it has a right and a duty to see that the original sewer plans are sufficient for that town for all time to come, so that when a sewer is built on any particular street they may know that it is a part of the ultimate system. In the same way we require plans for sewage treatment also. Sometimes it isn't necessary to treat the sewage but we want to know that when time for treatment does come there will be room available to erect a plant without unnecessary expense.

The same applies to waterworks. In water matters we pay particular attention to the source of the supply. I won't go into the various sources of supply and method of purification now but, in general, if the supply is not absolutely safe for immediate use the town or corporation is required to put in plans for purification of some sort.

Another important duty of the Waterworks and Sewage Section is co-operation in typhoid epidemics. Under the present organization of the department the medical officer, whether he be the County Medical Inspector or some one sent from the Harrisburg office, is in general charge of the epidemic but the Engineering Division has direct charge over the water supply, the sewerage system and any other sanitary improvements that may seem necessary to control the trouble.

I have often been asked by engineers in other states why it is that we get along in Pennsylvania without friction between the medical and engineering departments in epidemics. They do seem to have trouble in other states. We haven't had it here and I think it is because both sides in Pennsylvania are trying to do their duty, and it seems to me that if trouble arises somebody is shirking.

The question of industrial wastes and particularly the wastes from tanneries and coal mines, is becoming a serious problem in Pennsylvania. To date the Department has done very little in removing pollutions of this character. We have asked for an appropriation

that will enable us to do some experimental work and make some investigations, and we hope to develop something that is practicable.

It is entirely feasible to neutralize mine drainage and to care for industrial wastes but it means the expenditure of much money. If we require tanneries to put in complete disposal plants it will cost so much that it would drive these industries from Pennsylvania.

The mine drainage problem is serious. These wastes can be neutralized, but it would mean a considerable added cost for coal. This neutralization must, therefore, be studied for each stream and only be applied when the benefits are commensurate with the cost. The development of by-products to cover the cost of treatment has been suggested. The department hopes to develop some practical method that will go a long way toward the care of these wastes.

The Engineering Division now has charge of the water containers for taking samples of water. In the past, I believe, there has been a little doubt as to the proper method of procedure; sometimes you would send in requisitions for water containers to the Division of Supplies and they would be a long time coming. Now, when you want water samples taken anywhere, write to the Engineering Division for containers and they will be sent promptly. Every requisition for water containers will be honored but don't make the laboratory do unnecessary work. If a well or spring is plainly polluted don't ask to have an analysis made of a sample of that water until after the people have been taught how to protect that well or spring and cut down the chances of pollution.

The next section is the Design and Construction Section. The work of that section is mainly in connection with construction work at the three State Sanatoria.

In addition, the department is doing mosquito eradication work in South Philadelphia and Delaware County, in the vicinity of the Hog Island Shipyard. This work was undertaken last year in cooperation with the Emergency Fleet Corporation, the Navy Department, the Army, and the State Committee on Public Safety and Defense. It is still being carried on.

The Field Inspection Section has to do particularly with the inspection of watersheds from which public water supplies are taken. Up to two years ago a force of about sixty inspectors was maintained on that work. Recently the force has been cut down and we have been restricting the work of the full time inspectors to the watersheds, using health officers for miscellaneous inspections.

That policy is going to be continued and we will use the health officers more and more; this means a better income for health officers and that we can hire a better type of man for these positions. In this work of inspection of watersheds we often encounter conditions which are difficult to abate. Sometimes people say "the State moves very slowly." They want us to throw cases into court right away. We do not do it because when the department takes a case into court it has the same standing as an individual,—in fact not quite as good,—and we must make sure that we have evidence that will stand before a jury that generally favors the defendant in the case.

The Bureau of Housing was organized under the Act of June 24, 1915. That Act is for the relief of overcrowding or insanitary conditions in tenement, boarding, or lodging houses. It does not apply to buildings constructed subsequent to the Act, excepting when

these conditions develop after the buildings have been occupied. This Act does not give the department authority to demand plans of buildings before construction, and it does not refer to single family dwellings.

Where insanitary conditions exist in single family dwellings they must be handled as nuisances. There are only six people in the Bureau of Housing at present but this number will be increased within a short time. The bureau has done a great deal of good work and I think the quality of work is improving each week. Up to three months ago it was a separate division, but now it has been thrown into the Engineering Division.

The next and last section of the division is the Public Service Bureau, which is engaged in the inspection of restaurants and eating houses and in handling the nuisances that are reported by health officers and individuals throughout the State. At this time of the year 75 to 100 nuisances are reported a day. Most of them are referred to the local boards of health in municipalities, and in second class townships, to health officers.

Within the last week we have started a new method with these local nuisances; whenever a nuisance is reported from a second class township and the health officer is ordered to make an inspection, a copy of the letter is sent to the County Medical Inspector and also a copy of the letter to the individual reporting the nuisance, so that the County Medical Inspector will be informed of everything that is going on in his district. I do not believe that this will require much time and oftentimes it will be a source of satisfaction to the County Medical Inspector.

In our nuisance work we must always remember that the department's authority over nuisances is simply over those that affect public health and constitute general, public nuisances. The State has no control over private nuisances. Of the hundreds of nuisances reported each week, at least one in a dozen is the result of spite work among neighbors.

The entire work of the division, to be successful, must have coöperation from all the divisions of the department.

A new burden has been placed upon us, or rather a duty; nothing has been done concerning the purity of milk in Pennsylvania. Years ago the department endeavored to carry on inspection of dairy farms but that was given up. On the whole it was not entirely successful. We can, perhaps, make proprietors keep the dairy barn fairly clean and take reasonable precautions in cleaning utensils. But that milk is brought into town and if the containers into which it is placed for delivery to the houses have not been properly washed or sterilized it has become contaminated before it reaches the consumer.

There is no control over milk, except in a few of the larger municipalities. We have just been charged with working out methods for the proper pasteurization of milk and the sterilization of milk bottles, to see if it can be done and whether it can be done economically and practically by the small distributor.

Information will be available for distribution within the next six weeks or two months. When ready, we hope to be able to persuade every municipality in the State to pass proper ordinances so that there will be adequate protection of milk against contamination, from the time it is brought in from the farm to the time it reaches

the ultimate consumer. That is going to mean hard work. It affects everyone and unless you are all back of it we won't be able to do anything at all.

This covers in a general way the work of the Engineering Division.

DISCUSSION.

Q.—What proportion of typhoid fever cases are traceable to milk borne infection?

A.—It is very hard to say. The greater proportion of typhoid fever cases are water borne, but we do have every year two or three clear cut milk epidemics. They are usually rather small. We have had one big ice cream epidemic with a total of about 2,200 cases.

Q.—What can be done in a case where an individual is maintaining a pig sty directly over a stream and causing pollution of that stream?

A.—We handle a great many of those cases each year. Sometimes it is necessary to resort to rather drastic measures in order to obtain abatement of the existing condition. We had a case at Hog Island last summer where there were twenty-five or thirty pig pens, all of them filthy and swarming with flies. The owners had been notified several times but had taken no action, so we had to send our health officers there to remove the pigs and burn the pens.

Q.—Is there any special ruling as to how far from a stream a pig sty may be built?

A.—The idea is to try and keep from polluting the stream, if it is a stream where that pollution would be a menace to health. Any reasonable distance is all right, depending upon the nature of the soil and the condition in which the pen is maintained.

Q.—What about sewage from small towns being discharged into streams?

A.—The Act of April 22, 1905 is entirely in terms of extension of systems. If a municipal system was in existence in 1905 and has not been extended the State has no authority; if privately owned the State can take action. The general policy in regard to sewage treatment has undergone a considerable change in the last four or five years. Up to about five years ago sewage treatment plans were ordered rather indiscriminately, but that has been changed. So whenever you hear of a sewage treatment plant being ordered for any municipality in your district you can feel sure that the department is convinced that it is absolutely necessary for the health of the people. The outline plans are ordered now however, instead of actual construction, such as used to be ordered.

Q.—How about the use of night soil as a fertilizer?

A.—The general night soil Act, as I think all of you know, forbids the use of night soil on any ground on which vegetables are grown which are eaten uncooked by man, unless treated by methods approved by the Commissioner of Health. These methods are rather cumbersome and it is safer to say that the State discourages the use of night soil on truck patches.

Q.—Is there any law requiring the pasteurization of milk?

A.—No. A number of towns have ordinances requiring pasteurization but on the whole the laws in Pennsylvania regarding milk are probably less extensive than in any other State in the Union.

Q.—Do I understand that we may now ask for bottles when requests come to us to test water where there is no suspicion of typhoid contamination.

A.—We do not like to test water where it is simply to satisfy idle curiosity. If any of you gentlemen are convinced that an examination is necessary, write for the bottles—but if not, we would like to have the laboratory spared that work. There are two million people in the rural districts; that means four or five hundred thousand houses; each house has a well; and if the laboratory were to undertake the analysis of a sample of water from each of these wells it would mean endless work.

Q.—Are there any other laboratories in the State where water examinations can be made?

A.—Yes. There are laboratories in most of the large cities in the State where they will make the analysis at a cost of about \$7.50. Harrisburg, Meadville, Allentown, Erie, Pittsburgh, Philadelphia, and two or three other cities in the northeastern section of the State have at least one laboratory equipped to make these analyses.

Q.—When a certain case is reported to the local authorities and they fail to act in abating the nuisance, and it has been reported to the County Medical Inspector and he doesn't hustle along, what are we to do?

A.—Keep after him until he does. Report your case to the County Medical Inspector or to the Harrisburg office. It seems to me that all things in the county should go to the County Medical Inspector. It strengthens his hands and he has more complete information than the central office would have and can better handle the situation.

Q.—How about a case which has been reported about six times to local, state, and federal authorities and nothing was done?

A.—This new system will help. Sometimes people report something which for some particular reason cannot be handled by the department and the County Medical Inspector or the local health officer through whom the report came is never advised as to why nothing was done. The department may have gone into it and failed to go to the rest of the way and tell him why it was not done. In the future that will not happen.

Q.—Cite nuisances over which the department has not jurisdiction.

A.—The stagnant pool might be considered as one type of nuisance over which the department does not have control. About the only public health consideration we could give a pool of stagnant water would be as a mosquito breeding place, and unless we could prove that it was a breeding place of malarial mosquitoes we couldn't do much with it.

Q.—Where a nuisance occurring within a borough has been reported to the borough officials first—and they don't like to take it up for fear of hurting the feelings of their neighbors—what shall we do about it?

A.—Report it to the Harrisburg office; it is then entered in the complaint book and we keep after it until we get a satisfactory answer and report of abatement. In some instances if the local board of health won't do anything the board is displaced and a health officer is sent in to do the work.

Q.—How are unpleasant odors classed? As nuisances?

A.—Investigate them and find the cause. There are some unpleasant odors in nearly every line of industrial activity.

Q.—What about rendering plants?

A.—All we can do is to see that they have proper methods for handling the animals and keeping the place clean. In all establishments of that kind there are necessarily some unpleasant odors.

Q.—What would be the proper thing to do in a case of this kind: A widow with a pension of \$25.00 per month, living in a small house on the outskirts of town, was crippled in both feet and had an imbecile child. The house became polluted with human excrement and the question arose as to what to do with the inmates of the house, as they refused to move.

A.—Where the income is not sufficient, as in a case of that kind, it should be taken up with the poor authorities and the Board of Lunacy. The imbecile child should be sent to an asylum and the poor authorities should take charge of the house. We have been able to interest local civic associations in cases of that kind where the public health consideration has not been very plain.

The department, under the nuisance act, has the right to go in and abate the nuisance and the cost of it is charged against the property as a lien; that could have been done in that case. However, much depends upon the isolation of the property.

Q.—Can a condition like this be corrected? In a borough where there is an outside privy sewer connection the flush for the toilet is the waste water from the kitchen sink.

A.—That is generally against the State Plumbing Code. There is no plumbing code for boroughs but many have adopted the plumbing code for cities and that is a very good idea. This condition should be corrected and the local board of health should be able to handle it.

Q.—How about the testing of milk in rural sections?

A.—The department does not do that. The State Livestock Sanitary Board will sometimes do it, but generally they feel that it is out of their province.

Q.—Is there any reason why water that is being chemically treated should have a bad taste?

A.—It is rather difficult to treat water chemically and not have an unpleasant taste occasionally, but it should only be slight.

WATER AND WATERWORKS.

By C. A. Emerson, Jr., Chief Engineer.

The problem of water supply naturally divides itself into two parts First—the water supplies for municipalities and second—those for private residences. There are over 1,200 public water supplies in Pennsylvania and at first thought it would seem that these constitute the greatest problem, but as there are some two million residents in the rural districts we have probably four hundred thousand or more individual water supplies, so in reality the supplies for the rural districts constitute the greater problem and will be considered first.

Rural water supplies are generally from a well, a spring or a cistern but sometimes recourse is had to a nearby stream,—which is apt to be polluted.

The character of soil has great influence on a water supply. Limestone crevices will carry pollution for miles with no purification worth mentioning. Shale is almost as bad. Sandstone or sand and gravel are the safest sources, as in these formations there is natural filtration.

Privies, cesspools and barnyards upon the slope above the well or spring are menaces to the supply.

CHARTS DISPLAYED.

Charts showing methods of protecting drilled and dug wells and springs from surface pollution. These charts are contained in Department Circular entitled "Wells, Springs and Streams."

Municipal supplies developed from surface and underground sources. The surface supplies, namely those taken from streams, are most liable to pollution. In fact they generally are polluted. Underground sources such as springs and deep wells are relatively unimportant in Pennsylvania excepting in the glacial district in the northwestern portion of the State.

Purification of surface supplies is usually accomplished either by long time storage in large reservoirs where sedimentation, exposure to sunlight and air, together with other features of environment differing from that of the human intestine, for a period of three months or more, offers fairly good protection.

Filtration is divided into two general methods—slow-sand and rapid-sand filtration. By slow-sand filtration we mean passing the water by gravity through large artificial beds of sand some three feet in thickness. These beds are operated at rates of from three to six million gallons per acre daily and there is a mechanical straining of bacteria and turbidity as well as biological action in the top few inches of the sand surface, which sand becomes foul with organic impurities abstracted from the water.

These filters are cleaned by removal of the top layer of sand. After several layers have been removed it is necessary to replace with new sand. These filters give good results but are generally very expensive to install, because of high cost of proper sand in Pennsylvania.

Rapid sand filters are operated at rates of about 125,000,000 gallons an acre daily or some twenty-five times that of slow-sand filters. In this type an artificial coagulant consisting of aluminum sulphate is used. This chemical reacts with the alkalinity of water, forming aluminum hydrate, a light flocculent precipitate, which drags down the turbidity of the water and forms a thin film on the surface of the filter sand. This is very similar to the white film just inside the shell of a hard boiled egg.

This film forms a very effective strainer and serves to abstract practically all the bacteria from the water applied to the filters. Owing to the high rates of operation these filters must be cleansed every day or two. This cleansing is done by reversing the flow of water and washing the impurities into the sewer.

Treatment of water with a chemical germicide such as hypochlorite of lime or chlorine gas is a valuable temporary method of protection. The action of these chemicals is the formation of hydrochlorous acid, which breaks down, liberating nascent oxygen. This oxygen attacks the organic matter including the bacteria.

An excess causes disagreeable tastes and odors in the water and you can therefore realize that, with the organic content of the water changing daily, it is difficult to balance the germicide so that the organic matter and bacteria will be destroyed but without sufficient excess of germicide to cause these disagreeable tastes and odors. We require the germicide treatment subsequent to filtration as an additional barrier against pollution and feel that in emergencies it offers a valuable temporary method of protection. Owing to the difficulties in successful operation the department has not approved germicide treatment as a sole permanent method of treatment for any supply and probably never will.

In these remarks I have tried to indicate that the provision of a suitable water supply for a private dwelling in the rural districts requires careful thought and study of the individual supply with some knowledge of sanitary procedure and much common sense; also that the municipal supply is an engineering problem pure and simple and should not be approached by one who has not had adequate training and experience. Many of our epidemics have been due to the fact that the town people depended upon an engineer of insufficient training or experience, who really was not competent to advise.

DISCUSSION.

Q.—Will the department examine a sample of water when it is sent in if the request has not been made through one of the department's officers?

A.—If it is sent in a department container the laboratory will make the analysis, but if it is sent in anything except a department container the laboratory will not analyze it because we know nothing regarding the sterile condition of that container.

Q.—When an order is issued to boil the water how long should it be boiled?

A.—We usually say 15 to 20 minutes. It isn't necessary to boil it that long but we say 15 to 20 minutes in the hope that people will boil it at least five minutes.

Q.—Will you explain a simple method of cleaning a polluted well?

A.—The department's circular on that subject explains the method in as concise a manner as possible. This circular also contains cuts of various methods of protecting wells after they have been cleaned. Assuming that the well is an ordinary dug well, the method of cleaning would be—first, to pump the well as nearly dry as possible, then add a strong solution of hypochlorite of lime or if this is not available unslacked lime; scrub down the walls with this solution, then let it remain for an hour or so while the well is filling and pump the well dry again.

If there is mud or rubbish on the bottom of the well it should be removed. Generally when a well needs cleaning it also needs protection from surface pollution. Ask the householder to protect it against surface contamination and to disinfect the well; then the department will make a second analysis. It would be futile to recommend disinfection if the well is just below an open box privy vault, a cesspool, barn yard, or the dwelling, because in those instances pollution is probably carried by an underground water bearing stratum and is probably surface pollution.

Q.—If a landlord refuses to clean a well what can we do?

A.—Post the well. A few years ago when there were plenty of vacant houses the tenant would generally prefer to move, but now that is not the case. We have never prosecuted a person for not cleaning a well but we have in many instances taken away the handle from the pump, put rock salt in the well, or taken some other measure that would render it impossible to use the water for drinking purposes. Most leases of property mention the water supply and that is included in the rental price, which gives the tenant a hold upon the landlord.

Q.—In regard to the ordinary country dug well; would you advise taking samples where you find faulty surface conditions before purification and protective measures are carried out?

A.—I would not, unless those samples can be taken in the midst of a drought; and if surface conditions are very bad I would not hesitate to condemn that well.

Q.—In cleaning the dirty apron of a filter plant, will that material pollute the stream and affect the water supply of the town below?

A.—Yes, but that pollution is relatively unimportant for the reason that filter plants are usually on large streams and this polluting matter enters in very dilute solution so that it is well mingled through the stream and the additional burden on the filter plant of the town below is scarcely noticeable. In some sections where the flow of water is low during the summer and they have to conserve the supply, this wash water is stored in large reservoirs and later refiltered and used.

Q.—You gave the measure of slow sand filtration at about three million gallon per acre, what is that in people? About 20,000?

A.—The ordinary Pennsylvania municipality uses about 150 gallons of water per capita of population, so it would be three million divided by 150 times the population of the town. That would not leave any allowance for the extra large consumption during the summer months or during the winter when spigots are left running to keep the water from freezing.

Q.—How often do the slow and fast sand filters have to be cleaned?

A.—Anywhere from twice a week to once in six weeks. It depends altogether on the turbidity of the applied water. An average run between cleanings of two weeks would be a fair figure. Rapid sand filters are generally cleaned once a day.

Q.—What do you think about charcoal filters?

A.—Charcoal filters are rapidly passing out of existence. Theoretically they are fine, but 99 times out of a hundred the private filters are not properly maintained and they become pretty fair incubators.

Q.—Can any physician get a container to have water analyzed?

A.—Yes, but we would rather have the request come through the County Medical Inspector or some other department officer. When we get a request from a private physician we request information as to the particular need for the analysis before sending out the container.

GARBAGE AND GARBAGE DISPOSAL.

By C. A. Emerson, Jr., Chief Engineer.

Garbage collection can best be viewed through rose color glasses, at least in so far as the average municipal conditions obtain. Perhaps it would be as well therefore to describe ideal conditions and set up a standard for comparison with conditions ordinarily found.

COLLECTION.

Each householder should provide a water-tight metal container provided with handles and a metal cover. This container should be of suitable size to hold accumulation of garbage from the household between dates of collection. Tin cans, broken china, paper and other refuse should not be deposited in the garbage can. The can should frequently be cleaned with soap and hot water.

Collections can be made directly by the municipality or through proper form of contract with a reputable collector. Collections should be made at least twice a week from the first of April to the first of November and at intervals of not more than one week during the remainder of the year. Collecting wagons or trucks should have water-tight bodies equipped with tight covers which should be closed excepting when garbage is actually being placed in the wagon.

Garbage collectors should be provided with neat uniforms, should be courteous, and there should be no necessity for tipping by the householder to secure proper and regular collection of the garbage. That unnecessary noise and profanity on the part of collectors or drivers should be forbidden goes without saying.

DISPOSAL.

There are six methods of garbage disposal in ordinary use: Reduction, incineration, trenching, burial at sea, the public dump and feeding to pigs.

Reduction. This method consists of cooking garbage for a period of several hours in large closed metal vats and abstracting grease through use of a grease solvent. Live steam is ordinarily used for cooking and naphtha for the solvent. The water of condensation and the naphtha are separated from the grease by fractional distillation. The grease is sold to soapmakers, the naphtha used again and the water is wasted. The cooked garbage remaining is sold as a fertilizer base or cattle food.

This method offers valuable by-products and returns a profit on the cost of disposal but the expense for installation of plant and maintenance is so great that it is doubtful if the method is applicable to municipalities having populations less than 85,000 or 100,000.

Incineration. This method is simply burning of the garbage in properly designed furnaces. Dead animals and inflammable household refuse, such as paper, cloths, etc., as well as street sweepings may also be incinerated with the garbage. The method is applicable to municipalities of all size but it is expensive as there is no return to offset the costs.

The furnaces must be properly designed and particular attention to the combustion chamber and arrangement of flue is necessary, so as to maintain a temperature of 2,000 degrees or more in order to completely consume all gases of combustion.

There are numerous incinerating plants in Pennsylvania operating without creating a nuisance objectionable to nearby residents.

Trenching. Garbage can be buried in trenches without producing fly-breeding conditions. The method, however, is expensive and as decomposition of the garbage is apt to sour the land there is little return to offset the cost.

Trenches should be prepared in advance and are usually four feet or more in depth and perhaps three feet in width. The trench can be filled with garbage to about eighteen inches below the surface. Dirt should be replaced promptly and tamped, any surplus being mounded over the trench. Garbage should not remain overnight uncovered in the trenches. Great care should be taken to select a site well removed from a spring, a well or a stream and also a site on level or only gently sloping land.

Burial at Sea. This method is not practiced in Pennsylvania. It simply consists of loading the garbage on scows which are towed ten or more miles off shore. The method is expensive and offers no returns to offset the cost.

Public Dump. You are all familiar with this method. Nothing can be said in its favor for in principle and in practice it is wholly bad. However, it is an evil that is with us and must be recognized until municipalities can be educated to better methods.

If care is taken to select a site reasonably well removed from habitations and the top surface of the dump is kept level so that a steep bank or face is formed over which the garbage can be dumped and each load followed immediately by a load of cinders, ashes, waste dirt from cellar excavations or the like, danger of nuisance will be reduced to a minimum. An attendant clothed with necessary authority should be stationed at each dump. This attendant should see that all garbage is promptly covered; also that papers are not permitted to blow away. A fence of wire mesh surrounding the lot or a simple type of open incinerator in which inflammable refuse is burned with a clean fire assists materially in maintaining the dump in proper condition.

The best method for handling this situation is to educate the town to provide some better method of disposal and abandon the dump.

Feeding to Pigs. This is a legitimate method of garbage disposal and offers a handsome return. Unfortunately, most owners endeavor to take every possible dollar of profit and consequently pig farms as usually existing are active nuisances and the cause of many complaints.

In the first place, due care should be used to select a site well removed from a populated district for at the best a pig farm cannot be considered a desirable neighbor. Ground should be porous and the slopes of the surface should be gentle. Constant supervision is necessary to keep the plant in the necessary state of cleanliness.

If the pigs are kept in pens continually, these should have floors and the lower portions of the walls of water-tight construction. Concrete is not necessary as ordinary boards soon swell and become watertight. The floors should be elevated about two feet above the

surface so as to permit the ground beneath to be cleaned and inspected. Garbage should be placed in feeding troughs and not thrown promiscuously on the floor. Pens must be cleaned daily, all pig manure and unconsumed garbage being burned or buried.

Fly-proof containers should be provided for bones and these should be removed from the pig farm at least once a week.

A larvicide should be used freely for spraying the interior of the pens, the driveways and the ground beneath the pens at intervals of once a week during the summer months.

The pigs should be inoculated so as to protect them from hog cholera.

Experience covering a period of ten years has demonstrated that boiling garbage for a period of one hour does not materially interfere with its food value. Pigs apparently thrive on boiled garbage equally with those receiving raw garbage and boiling does offer a precaution against infection of the drove.

Refuse from fish markets and fruit stands as well as large quantities of coffee grounds from hotel and institution kitchens should be buried and not placed in the feeding troughs.

At the present time garbage from a total population of over one-half million in Pennsylvania is being fed to pigs in privately-owned or institution pig farms. In Massachusetts some 80 per cent. or more of the municipal garbage is fed to pigs. It is therefore apparent that this method of disposal is growing in favor. It offers the greatest return of any method of disposal now in ordinary use. The department should endeavor to educate all owners of pig farms or municipalities to consider this method of disposal, so that due precautions will be taken to provide proper buildings and to secure proper attention. Otherwise nuisance conditions are almost sure to follow.

TYPHOID CONTROL.

By C. A. Emerson, Jr., Chief Engineer.

As typhoid fever and epidemic dysentery are contracted primarily by consumption of water and foodstuffs contaminated by human excretal wastes infected with the specific bacteria, and secondly, by direct contact with a patient, it follows that the control of these two diseases depends largely on proper disposal of these excretal wastes.

If we had to do only with bedfast patients the control and ultimate eradication would be a simple matter for it would consist entirely of disinfection of the bed pans, the clothing, linen, dishes and any and all materials used by the patient. Unfortunately, however, we have walking cases of typhoid and dysentery, and worst of all—carriers.

Reliable investigators have estimated that 4 per cent. of convalescents from typhoid fever are chronic carriers for a period of three or more years after apparent recovery; also there are many in the country who will carry typhoid bacteria as long as they live. This number has been placed at more than 20,000.

When we realize that the bowel discharge of these typhoid carriers are just as dangerous as those from an active typhoid case, it is apparent that precautions in the sick room are only the beginning of the fight for eradication of this disease.

The problem is so large that a true picture can only be formed by studying masses or groups of cases. [Charts exhibited.]

Chart 1.—Showing incidence is about even in the rural and the urban districts, also that it is a disease of young people.

Chart 2.—Showing typhoid death rates in the registration cities of the U. S. as compared with the State of Pennsylvania. From January to June, 1918 we had 1,292 cases and from January to June of this year, we have had 814 cases, a gain of 478 cases. This chart indicates that there has been practically no reduction in the typhoid rate for the past four years, proving conclusively that our present methods are insufficient.

At present our fight is centered upon the precautions in the sick room and protection against contamination of drinking water and of foodstuffs eaten uncooked by human beings, such as milk, raw shellfish, fruits, vegetables and the like, as well as upon proper disposal of excretal wastes from the human system.

The first defect noticeable in our present system is the undue number of secondary cases included in each large epidemic. Secondary cases are those occurring in the same family or among friends visiting the patient and which are not due to the primary infection, but which may more properly be described as "contact" cases. These secondary cases amount to from 10 to 15 per cent. of the total number of cases or from 500 to 600 cases each year.

SEWERS.

Chart 3.—Compilation of study of 55 villages indicating greater prevalence of typhoid fever in those not provided with sewers. Excess about 40 per cent.

WATER.

Great typhoid epidemics of the country have almost invariably been due to infection of the public water supplies.

Chart 4.—Showing typhoid death rates for five-year period before and five-year period following filtration of water supply in certain large cities of the U. S.—Reduction 20 to 80 per cent.

Chart 5.—Showing growth of filtered water in cities of Pennsylvania greater than 10,000 population and corresponding reduction in typhoid death rate; also contrasting with death rates in cities of the same size but having unfiltered water. At present about 4,000,000 people in Pennsylvania receive filtered water.

MILK AND ICE CREAM.

The best methods of protection apparently consist of adequate pasteurization with proper cleansing and sterilization of all containers. Inspection at the dairy farms while conducive to a cleaner milk does not offer adequate guarantee against infection by typhoid carriers. In case of typhoid at a dairy farm these precautions must be taken; that the patient be excluded from any portion of the work of production or delivery of milk or ice cream until freedom from typhoid bacteria can be proven. This is in advance of the present practice which permits such a patient to return to work in the dairy as soon as he is physically able.

RAW VEGETABLES. If the provisions of the State Night Soil Law are observed and care is taken to have a good water supply on the truck farms danger of contamination of celery, lettuce, berries, etc. is reduced to possible contamination by carriers on the truck farms or in the stores handling these products.

SHELL FISH. Relatively unimportant in Pennsylvania.

WATER CRESS. Only one epidemic on record in Pennsylvania. Remedy consists of restricting the water supply of the beds to one of known purity.

SUSPECTS. Your attention is called to the necessity for careful study of all suspects. If you find a number of suspected cases of typhoid in a municipality, the central office should be notified at once for the same precautions should be taken as when the cases have been definitely diagnosed. By so doing we can save several days in the institution of precautionary measures and perhaps restrict the epidemic to a few cases.

PROCEDURE IN EPIDEMICS. At the present time our first steps are to require boiling of water, disinfection of stools and the careful census of all cases. Meanwhile careful study is being made of the water supply, milk supply and other usual sources of infection. I wish to call your attention to the necessity of securing complete and accurate answers to all the questions on the department census card; for instance as to ice cream. Ofttimes the patient or relative of the patient will say that no ice cream has been used but if you ask if the patient had ice cream cones, ice cream sodas or sundaes you will often develop the fact that ice cream has been used. It is of course important to ascertain the name of the dealer so that inquiry can be made as to the name of the manufacturer.

BROAD EFFECTS OF REDUCTION IN TYPHOID.

Eradication of typhoid has a far-reaching public health significance. Hazen's theorem, developed in 1904, was that "where one death from typhoid fever has been avoided by the use of pure water a certain number of deaths, probably two or three, from other causes have also been avoided."

Sedgwick and MacNutt in an extended investigation and review of this theorem state that it is sound and conservative but not necessarily precise. They found that after filtration of public water supplies in various cities one death less from typhoid fever meant from one to six deaths less from other causes.

(CHARTS DISPLAYED.)

Chart Illustrating Grove City Bacillary Dysentery and Typhoid Epidemic February, 1914.

Typical water infection due to pollution of a deep well by water from a nearby stream during flood. Cases distributed throughout the municipality about in proportion to density of population. Fourteen cases outside the borough all visited the town and used municipal water supply within the incubation period. Oysters, milk, raw vegetables, ice cream, were negative as causes. Municipal water supply only commodity used in common by all. Pollution of supply actually proven. Eleven hundred cases dysentery, 201 cases typhoid in population of about 4,000.

Chart Illustrating Shippensburg Typhoid Fever Epidemic, 1915.

Typical water outbreak. Explosive in character with cases well distributed and about proportional to density of population. No habitations on the watershed but laborers for State Forestry Department and State Highway Department had been working on watershed during summer as well as chance traversers of the shed and users of the highway. Contamination of water undoubtedly due to a carrier. Method of flushing water system, installing hypochlorite treatment, etc. explained.

Chart Illustrating Huntingdon Typhoid Fever Epidemic, 1918.

Typical water epidemic. Cause was failure in operation of hypochlorite plant installed for treatment of supply taken from a polluted stream. Total cases 123. Remedies instituted consisted of orders requiring boiling of drinking water, installation of an improved germicide treatment apparatus and creation of public sentiment for construction of a municipal filter plant.

Chart Illustrating Butler Typhoid Fever Epidemic, January, 1919.

Epidemic in Springdale section only. Supplied with water from mains of Butler Water Company and an unincorporated mutual association supplying only about 300 of the 900 properties in the district. Chance pollution of the Mutual Association's supply due to carrier. One hundred and fifty-two cases with infection clearly proven due to water supply. All other causes being negative. Inter-

esting feature was that pupils living outside the district but in attendance at school in Springdale section were not infected. Inquiry developed the fact that during the last two weeks in December when infection occurred the school was closed. The first week being week of teachers' Institute and the second the Christmas holiday. This theory is strengthened by the fact that teachers in schools outside of Butler in attendance at this institute contracted the disease, which developed after return to their respective homes.

Chart Illustrating Newport Typhoid Fever Epidemic. 1915.

Clear cut case of carrier-infected milk supply. Sixty-six cases all restricted to milk route. Typhoid bacteria isolated from feces of Mrs. W. who had been engaged on the dairy farm. This lady underwent a long period of treatment at a Philadelphia hospital following the epidemic and for two years or more it appeared that she had been free from typhoid bacteria but recent tests indicate that that this freedom was only temporary as her stools now contain typhoid organisms.

CONCLUSIONS.

It is futile to say that the fight for eradication of typhoid fever does not pay.

From January, 1906 to June, 1919, there were 152,100 cases of typhoid in Pennsylvania with 23,300 deaths. Assuming average figures for the cost of sickness and value of a human life we find that the economic loss of the State from this disease alone has been \$166,000,000 in 13½ years. The expenditure by this department for controlling typhoid during this period has been well under a million dollars. Can any one seriously ask whether a return of more than 165 to one pays?

THE ABATEMENT OF NUISANCES.

By C. A. Emerson, Jr., Chief Engineer.

Mr. Ness, who has charge of the Nuisance Section of the Engineering Division was to talk to you during this hour on the subject of nuisances, but as Mr. Ness is ill and not able to appear, I am going to take his place.

The first thing to be considered is the law under which we operate as it pertains to nuisances and if you will refer to it you will find in Section 8 of the Act of April 27, 1905, reorganizing the old State Board of Health and forming a new State Department of Health, the following: "The Commissioner of Health shall cause examination to be made of nuisances or questions affecting the security of life and health in any locality, and for that purpose the Commissioner, and any person authorized by him so to do, may, without fee or hindrance, enter, examine and survey all grounds, vehicles, apartments, buildings, and places within the State, and all persons so authorized by him shall have the powers and authority conferred by law upon constables."

The law also states that "The Commissioner shall have power and authority to order nuisances, detrimental to the public health, or the causes of disease and mortality, to be abated and removed, and to enforce quarantine regulations. If the owner or occupant of any premises, whereon any nuisance detrimental to the public health exists, fails to comply with any order of the Commissioner of Health for the abatement or removal thereof, the commissioner, his agents or employes, may enter upon the premises to which such order relates and abate or remove such nuisance." The law then provides that cost of abatement or removal may be charged back as a lien and collected the same as any other lien.

Let us look into just what the law means: In the first place it gives agents of the department power to investigate any nuisance or suspected nuisance on any property in the State. Second, it gives the department machinery to cause any nuisance to be abated and if the property owner is not willing to abate it according to the Act the department can abate and charge the cost against the property.

The law makes the procedure simple and we frequently abate nuisances where property owners will not do it. This law has been tested in many courts, has been carried to the Supreme Court, and we have had very favorable decisions so you need have no hesitancy in proceeding under this law because the chances are in favor of securing a conviction.

The law says it must be a nuisance which is detrimental to public health. That distinction must always be made. The department has no authority, nor would it have the moral right, to abate a private nuisance; it would be an improper use of State funds.

Our information regarding nuisances comes from two sources, first, reports of Department Health Officers, nurses, County Medical Inspectors, Engineers, dispensary doctors, the central office, or from any other employe of the department. It is one of the duties of department employes that whenever a nuisance is found which seems

to be a menace to public health, they shall report it stating the nuisance as found, the name of tenant, name of owner of the property and post office address. Each week the Nuisance Section receives hundreds of complaints of this kind. The Department Health Officer is instructed to make an investigation and report and he is paid while making it.

The second source of information is the mass of letters we receive from people throughout the State. Many people hesitate to report nuisances because they fear their names will be divulged.

I wish you would make a point of assuring people with whom you come in contact that the department does not divulge the name of the complainant in these cases; when notices are sent out they state that "such condition has been found to exist." Sometimes the Health Officer is given the name of the complainant so that in case he is not able to secure information he can go to the complainant and find out more fully about the nuisance in question. Sometimes the Health Officer makes a mistake and discloses the name of the complainant, but this does not often happen. This in general covers the law.

As to Method of Procedure: Health Officers are not authorized to proceed independently on inspections of nuisances or abatement of nuisances under ordinary circumstances. The Health Officer can communicate with the County Medical Inspector or with the Harrisburg office and invariably he will be ordered to investigate, unless an investigation is already under way through some other channel, but he is not given a free hand; that system was tried and found to be entirely impracticable. There are, however, emergency conditions that must have immediate attention. One of these conditions is a dead animal on the highway or in a public place; important, not so much that the menace to health is great but that the public soon grow tired of the nuisance and picture a tremendous menace to health. For the sake of the good name of the department these conditions must be cleaned up at once. The method is simple; the property owner, or the owner of the animal, in case it is on a public highway, is the one responsible under law and the burial of the dead animal is generally easy to bring about.

There is another point in connection with this; in the larger cities of the State there are reduction plants and bone boiling establishments, which will send into the country as far as ten or twenty miles for the bodies of dead animals. If the carcass is in good condition they will remove it without charge and sometimes pay four or five dollars to the owner of the property on which the animal is found. It is well to keep this fact in mind in abating nuisances of this sort.

One of the frequent sources of nuisances is the overflowing cesspool. Sometimes this is an easy condition to abate permanently. If the soil is porous we can usually arrange for percolation of liquids from the cesspool; if the soil is not porous the cesspool liquids will not percolate and it will be necessary to empty the cesspool by pumping, from time to time. We could cause a cesspool to be pumped out and charge it back to the property owner, but we could not have a new cesspool dug and file a lien.

Overflowing privies are frequent causes of complaint. That demands simply cleansing the privies. If they are not of a type that can be cleansed, the notice should call for condemnation.

Wash water in gutters in small towns is a source of complaint and this class of nuisance is increasing rapidly. If the soil is porous a cesspool will probably be suggested. If not, a sewage treatment plant is necessary or a municipal sewer system.

Sewers in Pennsylvania can be installed by sewerage companies. In second class townships the communities could get together and incorporate a sewerage company, put in a sewerage system, and be entitled to the same privileges under the law as are granted municipal sewer systems.

With the pig pen nuisance the only remedy is to keep them clean and thus prevent the actual nuisance. That generally means a constant fight. If the pig pens are so close to habitations that an ordinary degree of cleanliness is not sufficient, the pig pen must be removed; in some places we have to go so far as to burn the pig pens.

Garbage dumps are another source of nuisance. Every county inspector has written to the department at some time or another regarding a public dump. The only remedy for dumps, as they are ordinarily maintained, is to see that the organic matter is covered with inorganic matter.

A dump to be properly maintained should be kept with the top surface level with a steep face, so that when a load of garbage is dumped over the face of it does not spread all over the ground. The next load of dirt or bricks or inorganic matter of any kind can be dumped on top of the organic matter. If carefully done this is usually sufficient to prevent fly breeding and will reduce odors. Of course, a dump is not the best way to take care of garbage.

Waste from creameries discharged into small streams is a source of nuisance. It doesn't take much milk to foul a stream, giving sludge banks, growths on the bottom and a first class public nuisance. The only remedy is treatment of wastes from creameries. This, of course, becomes an engineering problem, and the division will be glad to advise you in any specific case. Ordinarily a cesspool is not sufficient for creamery waste; the grease from the milk will clog the walls of the cesspool and it will overflow in a short time.

We are coming to the time of year when canneries will be in full operation. The piles of fruit and vegetable waste, generally stacked up behind canneries and allowed to stand there until the odor becomes offensive, will be the source of a great many complaints. The remedy in these cases is to require daily removal of these waste products and their burial. Their fertilizing value is so low that the best thing is to require the owner to prepare trenches where the material can be buried promptly.

DISCUSSION.

Q.—Where do you draw the line between private nuisances and public health nuisances?

A.—We have probably 50 to 75 complaints coming into the department each week which are plainly private nuisances; for instance, a leaky spout on a neighbors house; certainly that is not a public nuisance; a defective sidewalk isn't a matter for the department to handle; water in the cellar is a matter between the landlord and the tenant, unless it becomes detrimental to health; then it can be handled under the housing law.

Q.—Do you have to go to court and get an order to enter a building to make an investigation?

A.—The department has had a great many of its officers attacked when investigating nuisances. Our instructions are that if the people are not willing to allow you to enter the house or property, get the constable or a State policeman. You have all the authority necessary but there is no use getting into trouble unnecessarily. In case of a department officer being attacked the department will always take the matter into court and generally we have won our cases.

Q.—Is stagnant water in a gutter considered a public nuisance?

A.—Yes, it should be.

Q.—In the matter of garbage; does the department permit the garbage of a municipality to be disposed of by burial, and how deep must it be buried?

A.—Yes. If it is covered promptly 18 to 20 inches are sufficient, that is within twenty-four hours. If it is allowed to remain uncovered until eggs are deposited, four or five feet would not prevent the hatching of the larvae.

Q.—How about covering it with lime?

A.—Generally it is not more than half covered. They will make a few bushels of lime cover a lot of garbage. Burial is not a particularly good method of disposing of garbage.

Q.—How about a stagnant pool in a second class township?

A.—You would have to prove that it is a menace to health. If it is simply water, with no sewage and just a little odor, that is pretty hard to prove. If it is a breeding place for malarial mosquitoes it should be investigated.

Q.—When can unremoved manure in boroughs be considered a nuisance?

A.—The department is now trying to insist upon removal of manure twice a week to stop fly breeding. Even with the use of larvacides, well constructed manure pits during summer are fly breeding places and the only remedy is to remove the manure frequently.

Q.—Would it not be well to require covering all organic and inorganic material on public dumps? Tin cans, bottles, etc. become filled with water and thus form breeding places for mosquitoes.

A.—The covering of dumps with inorganic matter is just a makeshift, but as long as the dumps have to remain it is the best that can be done. An incinerator should be constructed for the destruction of garbage. The question of garbage disposal is coming to the front in all of our towns and in the last five years there have been many incinerators constructed and other equally good methods installed.

Q.—How could you proceed to improve conditions in a borough where the local board of health is inactive?

A.—First try to have a good local board of health appointed. Then help them to get a good borough health ordinance and back them up in its enforcement. Unless you have a good local board of health it is hard to get anything accomplished. Of course the department has authority to take over health affairs where the local board is not doing its work properly, and at present we have about 125 boroughs under our charge.

Q.—In a municipality where there is no sewage plant and there are many overflowing cesspools, must that nuisance be abated by the individual owners?

A.—Yes. The State has no authority to compel a municipality to install a sewer system. The nuisance law and the law regarding

pollution of streams all come back to the individual property owner, so that if a municipality is in need of sewers the only way this can be effected is by working on the individual property owner. The installation of a municipal sewer system is generally more economical than some method of disposing of sewage on each individual property.

Q.—Do you have to get permission from the department of Health before installing a sewer?

A.—Yes.

Q.—Can a borough board of health compel a property owner to make connections with an existing sewer system.

A.—I do not think so unless there is a borough ordinance giving authority. They can proceed against the property owner however, for causing a nuisance.

Q.—Suppose no nuisance exists?

A.—The borough council has a right to pass an ordinance requiring a property owner to connect to sewers where they are available. It very rarely happens that there is not a nuisance on the property. You cannot connect to the sewer and charge it as a lien against the property unless there is a specific borough ordinance.

Q.—Does the State Department have a right to supervise the erection of a sewage disposal plant in a borough?

A.—No. The State law requires that a permit be obtained and that the Commissioner of Health may insert such conditions as may be necessary for the protection of public health. We endeavor to supervise these plants for the protection of public health but there is no law covering this.

Q.—Should the average pool of stagnant water be declared a nuisance?

A.—That is hard to answer because so many factors enter into the case. If it is in an isolated place or in the country it is not a public nuisance; if it is in the midst of a municipality or a village the chances are it might be called a public nuisance. It is not possible to make a general ruling on this question.

Q.—Is there any way of compelling dye plants and bleaching establishments to neutralize drainage from those plants before it is emptied into a stream?

A.—Yes; there is a way to compel it but unless there is some practicable method of bringing about that improvement to do so may cause the establishment to move out of the State.

SEWERAGE, SEWAGE TREATMENT AND THE DISPOSAL OF EXCRETA IN RURAL DISTRICTS.

(Abstract) by W. L. Stevenson, Assistant Chief Engineer, June 27, 9.30 A. M.

Sewage is the spent water supply of a town made dirty by use in homes and factories.

It is carried away underground by sewers. In the combined system of sewers both sewage and rain water are carried in a single conduit, but in the separate system of sewers the rain water is conveyed through one system of drains to the nearby watercourse and the sewage is carried in a separate system of pipes to a place for disposal.

Sewage contains pathogenic bacteria from excreta, solids which either float upon the surface or settle to the bottom and organic matter which is subject to putrefaction and is present both in solution and in solid form.

When sewage is discharged into a stream the water becomes contaminated by the pathogenic bacteria, thus creating a direct menace to the public health through endangering water supplies taken from the stream, bathing or shell fish layings.

The discharge of sewage into inadequate volumes of diluting water creates a nuisance to sight through the floating solids and discoloration of the water and a nuisance to smell through the decomposition of the organic matter.

The gross pollution of streams has an indirect effect upon the public health through the low grade development of the banks producing bad housing conditions and a very decided insanitary standard of living.

To prevent pollution of streams it is necessary to remove or modify certain of the objectionable characteristics of the sewage. This is accomplished by sewage treatment.

The coarser solids may be removed by screens. The finer suspended matter may be removed by sedimentation in tanks; the deposit is what is called sludge and is usually discharged upon sand beds for drying. The organic matter in solution may be rendered non-putrescent through the agency of certain bacteria and air in such devices as the trickling filter, which consists of beds of stone over which the sewage is sprayed from nozzles.

The pathogenic bacteria may be destroyed by means of chlorine gas or a solution of hypochlorite of calcium added to the sewage after the coarser particles have been removed from it.

The economic design of a sewer system and the selection of the necessary and most efficient processes of sewage treatment requires a broad knowledge of a highly specialized branch of engineering and such a problem should only be entrusted to a well trained expert.

The Act of April 22, 1905, prohibits the discharge of sewage into the waters of the State, but gives the Commissioner of Health the power under certain restrictions to designate conditions under which municipalities may do so. All plans for sewerage systems and sewage treatment works therefore must be submitted for approval to the State Department of Health.

In the rural districts public water supplies are not available and the collection and disposal of excreta are generally accomplished on the premises, frequently in proximity to the source of the drinking water and the dwelling house.

Therefore great care must be exercised to avoid contaminating the water or creating a breeding place for flies.

The general requirements for a sanitary privy are that it should be well ventilated, have all openings provided with fly screens, have a self-closing door and a self-closing lid to the seat.

When a privy can be located where no contamination of a source of drinking water is liable, it is possible to collect the excreta in a pit dug in the earth beneath the privy. A container for dry clean earth should be provided so as to cover the excreta each time the privy is used.

Otherwise strong metal cans equipped with handles should be provided of such height as to reach to within about $\frac{3}{4}$ inch of the under side of the seat. Cleats should be placed on the floor upon which the cans rest so as to center the cans directly under the seat. The cans must be removed when not more than two-thirds full.

In the rural districts where a water supply is provided in the house, the plumbing fixtures may discharge into a cesspool which can either be made tight as a protection to water supplies and the contents periodically removed, or, if no drinking water supply will be effected, the cesspool can be made with loose walls to provide for the leeching into the soil of the liquid.

Or a tight concrete tank, of capacity sufficient for about 24 hours retention of the sewage, may be provided and the outflowing water received into a chamber containing a siphon to automatically and intermittently discharge it into a system of 4-inch tile laid with open joints about 12 inches beneath the surface of the ground, on a grade of about 2 inches per 100 feet and in amount depending upon the kind of soil; for loose sand about 25 feet of pipe per capita; for lighter sand and loam 50 feet per capita; for heavier soils from 70 to 100 feet per capita. This system is not practical in a dense clay soil.

Legislation requires that night soil shall not be used on land upon which vegetables are cultivated which are eaten uncooked, except in compliance with certain regulations of the Department of Health.

DISCUSSION.

Q.—Are there any State regulations with reference to the flushing of sanitary sewers?

A.—A sewer should be laid on such a grade that there will be produced a velocity of not less than $2\frac{1}{2}$ feet per second in the flow of the liquid. Sometimes at the ends of sewers where the quantity is small it might necessitate pumping, and a flushing tank is placed at the upper end in these cases.

Q.—Is no private owner allowed to discharge sewerage into a stream?

A.—Yes.

Mr. EMERSON—In the past these sewage permits and decrees have been issued by the central office and no word has been sent to the County Medical Inspector. I imagine oftentimes the residents of

a community will come to you and say they have received a certain order from the State Department of Health, they will ask you why they have to do the things ordered and what the order means; will it facilitate things for you if you have copies sent you of all permits and decrees issued in your county?

A.—Yes.

Mr. EMERSON. We will send you a copy of the permit and a brief statement setting forth why it was done, and if you wish it we will send you a copy of the complete engineer's report on the project. Would it be of sufficient interest to you to have a copy of that report?

A.—No, except on special request.

Col. McLEAN. Dr. Phillips has suggested that plans and specifications be supplied on request of our district or county representative. Is that advisable?

Mr. EMERSON. Sometimes plans which you might say are typical plans, fall into the hands of people who do not understand them. Suppose we put out a typical plan for the treatment of sewage in country districts, somebody comes in and asks you for one of those blue prints; then he takes it out to his farm, puts it in and if it doesn't work the county medical inspector and the Department of Health are the first to be condemned. That is why we have hesitated to put out typical plans, but we do want to give you advice in any particular case.

Col. McLEAN—Just why should we treat sewage in Pennsylvania? This department is interested in preserving the health of the people, not in keeping the water in streams clear. In what respect do we guard the people by treating sewage?

Mr. STEVENSON—I think the strict interpretation would be "against disease transmitted through excreta reaching the streams through the sewage, thus polluting the stream and affecting water supplies and bathing, as well as shell fish beds," but I think a polluted stream does also affect the public health.

Take, for instance, a grossly sewage-polluted stream flowing through a town—what kind of houses do you find along that stream? What are the living conditions in those houses? Would they meet with your approval? So the pollution of streams flowing through a community does very much affect the public health. In addition to the annoyance it causes we have a low standard of living which is not subserving the public health. Therefore I should say that the treatment of sewage, first, protects against the transmission of typhoid fever and intestinal diseases, and second, it raises the standard of living in that portion of the community through which the stream flows.

Q.—How long does it require for water to become purified after pollution by sewage?

A.—It is a very common thought that streams purify themselves. This is partially true. The pathogenic bacteria away from the human body and at a lower temperature do die off, but on the other hand some persist and go on. The same thing obtains in streams as does in the artificial means of sewage treatment, namely the combination of bacteria and oxygen—the water absorbs oxygen from the air and the same bacteria grows on the stones in streams as grows on stones in filter plants. This natural purification should not be depended upon to protect the water supply however.

Q.—What is the present status with reference to the pollution of streams by the output of coal mines and industrial establishments?

A.—That is a very complicated and difficult problem. In mine waste we have a waste which is very acid in character and which has a germicidal action when sewage is discharged into a stream; to that extent it is a benefit. The cost of neutralizing that acid would be very great, furthermore, I am told that frequently mines which have natural drainage continue to discharge mine waters years after they are abandoned.

Tanneries produce a very ugly waste which contains fleshings from the hides, acids and alkaline, etc. The first step in the treatment of this waste is sedimentation.

In the case of other industries such as paper manufacturing plants, wool washing establishments, and other industries whose wastes contain organic matter, sedimentation is again almost the first step. The treatment of wastes on the whole is a far more difficult problem than the treatment of ordinary domestic sewage.

Mr. EMERSON—At 12:30 an opportunity will be given for the doctors to visit the Mont Alto sewage treatment plant. One thing I would like you to bear in mind is this, the plant has been overloaded, it has not been extended as rapidly as the institution. It is being extended now. By considerable additional work and excess labor on maintenance we are turning out a good effluent, but it is not the condition of affairs we like to see.

Q.—Why should a sewage disposal plant have a by-pass?

A.—It should not; it is advisable to have by-passes around certain processes, but not around the entire plant, because that places in the hands of the operator an opportunity to be careless. The plant you will see this afternoon consists of a sewer emptying into a screen chamber, then into a septic tank, then through a siphon chamber, then over a trickling filter; then the effluent is again caught and discharged on sand beds, then carried down through a little house where a bleaching solution is added, and then into a little creek.

“HOUSING SURVEYS AND HOUSING LEGISLATION.”

(Abstract), John Molitor, Chief, Bureau of Housing, Engineering Division.

(With distribution of pamphlet housing literature and blackboard illustrations.)

I am distributing this housing literature put into the form of a housing study because there are so few books published on housing work, and so many people are asking questions about it. Most housing books discuss conditions only in a general way. I think that by following through this course of instruction and referring to it from time to time you will get an idea of just what housing conditions mean, and their effect upon the health of the community. I intend, during the time allotted to me, to give some extracts from these papers, and would like to have you ask questions in reference to the descriptions that are given to you, so that I can find out what your thoughts are in reference to this work.

To begin with, I want to quote some references made to a housing inspection made in the city of Johnstown. It shows the relation of housing to the diseases of childhood. Many sanitarians have said that the death rate of infants under five years is the best index we have of the housing conditions of a community.

In this investigation in Johnstown we have an infant mortality rate, per 1,000 births, in houses that were clean and neat of 113.5. In houses that were dirty, the rate was 176.7; in houses that were dry, 122.5; in houses that were damp, 156.7; in houses with clean yards, 99.9; in houses with filthy yards, 169.3; in houses with water closet in the house, 108.3; in houses with privy in yard, 159.3; in houses with water supply in house, 117.8; in houses with water supply outside, 197.9; in houses with bath tub in house, 72.6; in houses without bath tub in house, 164.8.

Now then taking up the question of ventilation, etc., we find the mortality rate of infants sleeping in rooms well ventilated to be 28.1; infants sleeping in rooms poorly ventilated, 169.2; infants sleeping in rooms with two others or less, 66.7; infants sleeping in rooms with five others or less, 97.9; infants sleeping in rooms with more than five, 122.8; infants sleeping in separate bed, 55.7; infants sleeping not in separate bed, 108.6. The death rate for the entire city was 134, therefore, in every instance where improved housing conditions existed the rate was below that of the whole city; while in every instance where unimproved conditions existed the rate was greater than for the whole city. I cannot go into details, I just want to call your attention to that one item of statistics.

Let us take up several phases of housing work in general. For instance, we have evil conditions such as demoralization of neighborhoods. People make selections of location because of social and economic conditions; some because of nationality; and some because of religion. This causes overcrowding in certain sections of the city and results in, first, house overcrowding; and second, land congestion.

(Drawing illustrating addition to a house causing a dark room, and another drawing illustrating land congestion.)

The limit fixed by men who have made a study of the housing problems throughout England and America is twelve families to the acre; that means taking off the necessary area for avenues, streets, surface roads.

Again, in those houses occupied by a number of families they do not add to the toilet facilities. You will find that the toilet facilities intended to be used by one family of four or five will be used by fifteen or sixteen people. Nobody seems to take any care in maintaining the toilet in proper order, and so it degenerates into something more than a nuisance—it is a menace to health. If there is a sewer in the town privy vaults should be condemned.

There should be sanitary toilet facilities for each family. In addition, each family in a house of that sort should have an individual water supply. Sometimes an exception is made if the water supply is a hydrant placed in the fence between the two houses. Wherever possible, water should be installed in the house, and have at least a kitchen sink with underground drainage and if there is no sewer it should discharge into a cesspool. It stands to reason if these houses are located upon streets on which the city has water piped they should install water in the house. We know that the mother cannot take proper care of the children and herself if she has to go to the hydrant and bring the water into the house. She must carry that water for cooking, bathing, laundry purposes, etc.

We have again the condition of cellar occupancy. The basement should never be used for any other purpose than for storing coal, wood, etc. Where basements of that kind are rented out to a separate family they use the front room for a living room, and the rear room for sleeping. This is objectionable particularly because of the dampness and tuberculosis germs, for instance, will live for a long period in a damp atmosphere. This practice should be condemned. Every effort should be put forth by the health officers and County Medical Inspectors to stop this method of living.

Now, in these house of multiple habitation, you will find not only inadequate toilet accommodations, but you will find the toilets located in undesirable locations, especially among certain classes of foreigners. They will locate the toilet right in the kitchen. I have seen them put them on the landing of the stairway. I have seen them put them in the cellars, or on the cellar stairs or in some such location without any outside ventilation.

They are generally in the cellar in a dark corner, and are not properly taken care of, and not maintained in a sanitary condition. So that unless conditions warrant it and there is adequate light and good ventilation in the cellar, toilet fixtures should not be allowed there. There is no reason in the world why, under the best conditions, toilets should not be put in the cellars but, as you all realize, those conditions do not exist among the people whose living conditions we are trying to better.

(Drawing shown, illustrating overflowing contents of privy vault washing down over hillside.)

(Application.) Steps should be taken in cases of that kind to see that the privy vault is made to contain the contents without washing out on the ground. Cesspools should be made to take care of the

kitchen and laundry water as in case of storms it will wash down over the roadway, and perhaps into the other houses on the hill. In that case the County Medical Inspector may take up with the county constable a recommendation for the Court of Quarter Sessions for an order to prevent the surface water washing down the hill and on to the houses below.

Now I want to take up next the Housing Law. This is a copy of the State Housing Act passed in 1913 (which is the Act under which we operate), giving the Department of Health the authority to establish a Bureau of Housing for the sanitary inspection and control of tenement, boarding, and lodging houses; defining its powers and duties; and providing certain penalties.

It gives us ample authority in the case of tenement, lodging and boarding houses, but the great majority are private houses and can only be proceeded against under the General Act of 1905, creating the department under which any insanitary conditions detrimental to the public health and to the health of the inmates can be remedied.

The idea hereafter will be for the Bureau of Housing to work in co-operation with the County Medical Inspectors, sending inspectors to help them in difficult cases, asking their advice, and giving it when necessary. We want to work with you. We cannot undertake work throughout the State in the way we would like to do, so we must depend upon the County Medical Inspectors, Health Officers, and Boards of Health. It will be necessary for us to build up a thorough and comprehensive method for working out this Housing Act so that we can show the health officers just what we expect of them. The bureau will give further information as to methods of handling, details, etc.

In connection with this housing work, suppose a complaint comes in with regard to the housing conditions of a certain house in a town in a second class township. We send an inspector who will look up the local health officer and make an inspection in conjunction with that local health officer, report to the County Medical Inspector and to the Bureau of Housing, and if necessary serve notice demanding that the property be placed in sanitary condition.

First, visit the owner and ask him to coöperate with us and make his house fit for human occupancy. If he is agreeable, an interval of ten to twenty days may be given to start work. If he does not start work have it followed up by the local health officer who will make a report to the County Medical Inspector, who will investigate. If the case is reasonable, an extension of time will be given.

It is necessary to give some consideration where the owner is willing to carry out the orders of the County Medical Inspector, and the Department of Health. But where he is hostile it is necessary to proceed with the filing of the papers so that he may be prosecuted.

It is necessary to have the health officer appear before a constable stating the conditions existing and the Act of Assembly that this man is violating, and asking that he be brought before an alderman and ordered to comply with the Act and make the necessary alterations under penalty of the Act of Assembly. The health officer makes no arrests. The County Medical Inspector should keep in touch with the case and if he deems it necessary, we will send a man from Harrisburg to reinforce him.

If it is a case of bad housing such as a dark room, it would be necessary to serve a notice of condemnation. In that case it is necessary for either an agent of the Department, the County Medical Inspector, or the Health Officer to serve a notice condemning the conditions, stating what conditions are complained of, what alterations are suggested, and giving from ten to sixty days to carry out these orders. The notice is served on the owner and a copy is filed with the Court of Quarter Sessions; the third copy is mailed to the Harrisburg office in order that the case may be followed up. Now that procedure, while it seems complicated, need not become so. In most of the prosecutions, the facts were explained to the defendant he was willing to comply with the law. I doubt whether it is necessary for us to do much prosecuting. During the month of May we made a thorough survey of housing conditions in Harrisburg. We found 901 houses with insanitary conditions, out of 12,200 houses in Harrisburg. The owners were interviewed as fast as possible and other were communicated with by letter. There were 468 owners of those 901 houses. There were only about twelve owners out of those 468 who adopted a hostile attitude. I am only quoting this to show that you will not have the opposition you might expect in carrying out this law.

DISCUSSION.

Q.—Where does the borough council come in under this law?

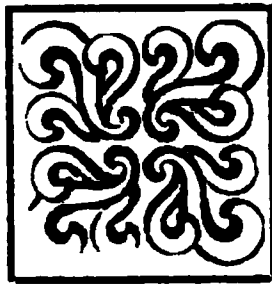
A.—We work through the Board of Health.

Q.—Does this act cover conditions in Philadelphia?

A.—Philadelphia has its own Housing Act. The State Housing Act applies to all municipalities except first class cities.

Q.—How should nuisances be reported in second class townships?

A.—In second class townships nuisances should be reported by the health officer. If necessary to prosecute, he should appear before a magistrate and swear out a warrant for the arrest of the property holder maintaining that nuisance.



TUBERCULOSIS.

THE FUNCTIONS OF THE TUBERCULOSIS DISPENSARY—
("Quiz" and Discussion)—Dr. Karl Schäffle, Chief Medical In-
spector of Dispensaries.

TUBERCLE BACILLUS INFECTION—(Discussion)—Major Wil-
liam G. Turnbull, Director Cresson State Sanatorium.

DIFFERENTIAL DIAGNOSIS IN PULMONARY DISEASES—
Major Milton Howard Fussell, Professor Clinical Medicine,
University of Penna.

THE DEPARTMENT'S FUTURE TUBERCULOSIS CAMPAIGN—
(Discussion)—Lt. Col. John D. McLean, Deputy Commissioner
of Health.

THE DUTIES OF THE TUBERCULOSIS DISPENSARY NURSE
—(Discussion)—Captain Thomas Klein, Philadelphia.

FREQUENT ERRORS IN THE DIAGNOSIS OF TUBERCULOSIS
—(Illustrated)—Capt. Thomas Klein, Philadelphia.

CLINICAL CONFERENCE—LUPUS—Dr. Jay N. Schamberg, Pro-
fessor of Dermatology, Jefferson Medical College, Philadelphia.

DISEASE OF THE CHEST OTHER THAN TUBERCULOSIS—
Thomas McCrae, Professor of Medicine, Jefferson Medical Col-
lege, Philadelphia.



QUIZ ON THE FUNCTIONS OF THE TUBERCULOSIS DISPENSARY.

Conducted by Dr. Karl Schäffle, Chief Medical Inspector of Dispensaries.

Q.—Doctor, what is the first function of the dispensary from your standpoint?

A.—Diagnosis.

Q.—Miss ———. What do you do with a patient on his first visit to the dispensary?

A.—Make him feel at home; take his history, T. R. R., weight; furnish him with paper napkins, sputum cups, demonstrating the use of same, and inform him that he may expect a visit at his home where the instructions of the physician will be explained more fully, and applied to his home conditions.

Q.—Dr.—When you have made the diagnosis of tuberculosis, do you tell the patient the truth?

A.—Yes.

Q.—Why?

A.—So that he may immediately take the necessary measures for his own improvement and for the protection of others.

Q.—Miss ———. What do you do when you go to the home of a patient?

A.—Explain the necessity for making it as sanitary as possible; remove all dust catchers, e. g., carpets, hangings, useless bric-a-brac, rubbish. Sees that sink and sewer are working, that garbage is removed, windows covered with netting, arrangements for patient to sleep alone, out doors, if possible; that his utensils are kept separate and that the food of the family is properly chosen and prepared; that the children are separated from the patient, and that all have dental care, and adopt habits of regular bathing, etc.

Q.—Dr.—What functions should the dispensary perform toward the medical profession of the community?

A.—Relieve them of the care of the indigent tuberculosis, and serve as bureaus of information as to the newer methods of diagnosis and treatment of the disease; also as to the state's facilities.

Q.—Miss ———. What should your relations be to the various social agencies in your community?

A.—Coöperative without duplication of effect, i. e., taking their tuberculous indigent for home supervision, or sanatorium care, and referring social problems which may be within the province of organizations in the community to those organizations.

Q.—Dr.—One of the important functions of the dispensary is its service as an admission bureau to state sanatoria—how do you select your cases?

A.—Send children and adults for whom there is a possibility of cure, referring the hopelessly advanced and the cases of fibroid phthisis to local institutions.

Q.—Dr.—As we do not believe in the use of medication except to relieve distress, or where it is required to enable the patient to rest,

or to have an appetite for the food which he should consume, how are you going to make the patient's visits to the dispensary worth while to him?

A.—By gaining his confidence and becoming intimately acquainted with him and his various problems, social and economic as well as medical, and endeavoring to help him toward their solution.

Q.—Dr.—When you are snowed under by a larger number of patients than you can properly see in the dispensary period, what is a satisfactory procedure?

A.—Form them into a class or two classes, according to whether or not they have had sanatorium experience, and give each class a practical talk on some phase of their progress, allowing discussion, and asking those who have personal matters to consider, to remain for a few minutes after the session.

Q.—Finally, what must be the dispensary's function in relation to the public?

A.—Educational in regard to tuberculosis and along general health lines, the center in the community for such activities as child welfare, the improvement of housing conditions, clean-up campaigns, and propaganda for fresh air schools.

Q.—Will any of the physicians who have sanatorium assistance in their counties tell us just how they get it? In some counties it is difficult to get help.

Dr. REIFSNYDER.—We have the West Mountain Sanatorium in Scranton under local management, control, and support. A number of years ago I was connected with it and gradually through a process of elimination of the others connected with it and because I was interested in it, I rather assumed control; and inasmuch as it was hard to raise money and most of that labor devolved on another doctor and myself, we came to have one woman practically in charge of the entire institution.

I decided that children under ten should be given the preference, so I also decided arbitrarily that only children and a few adults who were able to work should be admitted to that institution. They are all selected cases, children with real tuberculosis; we keep them going back and forth and some of them come here. It wasn't skill on my part, it was the natural sequence of being connected with the institution. Our advanced cases give me more worry than any others: I have a number of cases that I am especially interested in; what am I to do with them since we are not to send advanced cases to the sanatoria?

Miss O'HALLORAN.—Change your policy; send the children here and the advanced cases to West Mountain Sanatorium.

Dr. MINER.—We have had an arrangement by which the City Hospital allowed us to send patients to the hospital for X-ray at a charge of only the actual cost. At that time the man in charge of the X-ray was on our dispensary staff and we have now in the dispensary over 200 plates of patients who have been at the dispensary for examination. We have not been able to use this privilege recently to any great extent as the hospital has been busier than usual and it has been more difficult to persuade patients to contribute the necessary funds.

I would like to tell you about our experience with the White Haven Sanatorium. About 1910 the Wilkes-Barre Record, through the in-

fluence of the Tuberculosis Society, conducted a campaign for a local hospital for tuberculosis. They had established a school, and they realized the tremendous expense of maintaining an institution with many patients, so they finally agreed to maintain our cases at the White Haven Sanatorium; and we have been able to have the Poor Board maintain our patients there until they are able to be admitted to the State Sanatorium. Recently we have been able to have patients admitted in a very short time to the State institutions so we have not had to take advantage of their offer. I expect when I go home to see what I can do with the Directors of the Poor to get them to maintain our advanced patients at the White Haven institution.

Dr. J. S. MILLER.—I would like to know just what we are to do with our advanced cases; we have no means of taking care of them in York. I am told by the Harrisburg office that the city of York has an ordinance whereby they can segregate the tuberculous but neither the mayor nor any one else seems to know anything about it. The almshouse has been condemned. I would like some definite answer to take back to the people; we have no means of taking care of these advanced cases and the Poor Directors refuse to do anything.

A.—A modification of the Loomis Shack can be constructed at a comparatively small expense which will take care of these patients (Illustration).

Dr. REIFSNYDER—In connection with the West Mountain Sanatorium we were \$7,000 in debt last summer and an association was formed among the women of Scranton who had interested themselves in tuberculosis work. These women formed a society of about fifty members, all influential women and real workers, and I made about twenty speeches in the interest of the work. We raised our \$7,000, but I would like to add this, that by talking about children you can accomplish far more than by talking about old tuberculous dying patients; if you outline something for children the people will come across much more readily than for any other class.

Dr. Altman—Some years ago I became interested in general social work to such an extent that I made an effort to associate myself with every charitable organization in the county, starting with the Children's Aid Society. By doing this I was able to come in contact with every social worker in the county, likewise in all the other surrounding counties.

We were in a state of unrest generally on account of lack of money and after considerable study of the situation I found there was only one thing to do and that was to appeal to the men in charge of the county for aid. I found it impossible to deal with the Poor Board; they always do business from the standpoint of saving money and they look after themselves first, rather than after the people. My next means was the judges. By considerable effort I got in touch with the judges and through them I appealed along the lines on which we have been talking this evening, i. e. obtaining help in the care of the far advanced cases of tuberculosis belonging to our county. After considerable difficulty the desired end was reached and the judges became so interested that they insisted upon and forced, through the Poor Board, the building of a sanatorium, which has been in use for about five years. We accommodate during the greater part of the time from five to fifteen patients.

We still have some trouble with the Poor Board; they cannot see their way clear to furnish a trained nurse. In the beginning I was able to secure a trained nurse; she had too much to say and the Poor Board discharged her and hired a practical nurse who has been in charge for the last three years. I have no direct connection with this institution. They have however, given me the privilege of sending advanced tuberculous cases to the institution without making application and going through the regular routine of having the poor board visit the patient.

I have also become directly associated with every agency pertaining to tuberculosis, as well as social service; I am on the Executive Board of the Red Cross and largely through my efforts we have employed a woman who has charge of the civilian relief work; under her we have four young women on partial pay, who work in conjunction with the dispensary nurse and we have direct communication with all work connected with the Red Cross.

I have also become directly associated with a very large coal company operating in about 27 towns. They employ some 30 doctors, each district being under one doctor, and four trained nurses who are also social workers. We are in direct communication with all these works from the standpoint of hygiene and sanitation and are very often consulted along those lines. Another large company employs 8 physicians and one trained nurse and our dispensary nurse is in direct contact with the social worker of this company.

Another thing in which I have been interested is the Christmas Seal campaign. For some seven years I have had full control of the proceeds from the Red Cross and have been able to use this money among the deserving tuberculosis patients. In addition to this we have saved a sum amounting to about \$2,700.00. I want to say also that for the very poor patients we pay railroad fare to the different sanatoria, buy their clothing, shoes, etc., and oftentimes buy them food. This fund I have created for the purpose of building another sanatorium for the care of tuberculous patients and for three years I have offered to build a wing to the hospital, to accommodate from seven to ten advanced cases, but the trustees of the hospital have not seen fit to grant permission. I am hoping, however, to continue the work until some day we will be able to build the wing for these advanced patients.

Dr. BUTZ.—On the first of June we were ordered to move our dispensary to the Allentown Hospital. We moved, and in the month that has passed since, we have had more patients than for some time before. The impression has gone out among some that we have less cases and less work, but we have really had much more. We are splendidly situated and the hospital chief and his head nurse are doing their best to please us. They have given us three big rooms and have offered us the top floor of the hospital, the roof garden, to use for our advanced cases until we find places for them. They have an X-ray and have given us the use of it also. I think it is one of the best things that we have ever had.

Q.—In the matter of calling upon families of tuberculosis patients who have been sent to the sanatorium; it has not been the custom or rule to call upon them more than once or twice after the patient has been removed unless there are other active cases in the family. What is the future plan?

A.—Keep after that family until every member is in the dispensary; then keep after them sufficiently to educate them to the point that they can receive the patient back with the consciousness that this is his most trying time, that these are the conditions that put him where he was, and that it is up to them to help him. That kind of follow-up work will be far more valuable than the kind of follow-up work we have been doing.

TUBERCLE BACILLUS INFECTION.

Major Wm. G. Turnbull, Director, Cresson State Sanatorium.
(To Nurses.)

The first thing I want to talk to you about in tuberculosis is your own personal attitude toward it because we have a great deal of trouble with the nurses fearing that they themselves may contract tuberculosis. I do not think there is anything more incongruous than a nurse who comes to an institution of this kind and then runs away for fear of the disease. A nurse who is in that mental attitude is unfit to do public health work of any kind. The way you act and the things you say will have more influence upon what the people say and think than all that the doctors can do in the dispensary. That is one thing I feel is a very serious thing, and something we cannot be too emphatic about.

Some years ago, when the tubercle bacillus was discovered, everybody thought tuberculosis would be ended. We thought it was an ordinary every-day disease such as other contagious diseases and that we could destroy the tubercle bacillus just the same as any other germ. That belief is still persisting.

As far as you are concerned you need not be afraid of ordinary contact with tuberculosis patients. There is practically no danger from ordinary contact in tuberculosis. If you will act on that, I think your minds will be a great deal easier in handling these cases. You are not going to catch it from them. This is going to require some little explanation.

We believe that everybody in civilized communities is affected with tuberculosis. That can be proven in a great many ways. It has been proven on the autopsy table that every person who dies from diseases other than tuberculosis can be proven to have healed lesions in the lungs, of some kind or other. It can be proven by the X-ray and positive reaction to tests. So we will just take it for granted that every one who passes fourteen years of age has been infected with tuberculosis. We do not have to worry, we have healed up these lesions. If we can handle the millions and millions of germs that are shut up in our lungs we do not have to worry about those we get from our neighbors. They are perfectly harmless to us because we have built up a resistance to them. In other words, the infection that you have to fear after you have passed fourteen years of age is an infection from the inside and not from the outside.

Take the records of doctors, nurses, and attendants working in a dispensary who are exposed constantly to tuberculosis, and the statistics show that the incidence of tuberculosis in tuberculosis institutions is much lower than in those outside. It is less because you lead a better regulated life. You come nearer to leading an ideal life in this work than in any other line of nursing.

Another thing that is even more striking is that statistics show that husband and wife do not contract tuberculosis from each other. Now, then, there is the closest exposure that you can think of, and if that does not increase tuberculosis you have little to worry about in

the contact of adults. I want you to take for granted that you are not in danger in tuberculosis work. If your patient has a cold or has bronchitis, be careful you don't catch it, but there is no danger of catching tuberculosis because you already have it.

The only thing you need to worry about is the breaking out of the disease that is already in your own chest. We believe that the time of infection from tuberculosis is childhood. In children under two years infection is always fatal, and quickly fatal. If a baby gets tuberculosis it practically always dies. From two to four years, they have a chance to get better. Then from four years on, the death rate falls rapidly, and from four to fourteen the death rate is very low—it is the age when the death rate is lowest in tuberculosis. In the tuberculosis history it is probably the most important age. It is in that age that the child is going to get his infection, it is in that age that the seed is going to be planted, and it is in that age that he is going to build up his resistance.

What becomes of that seed during that time will determine the crop when the child is twenty or twenty-five. After you pass fourteen, you begin to get the results of the previous infection. You have the tuberculosis known as chronic tuberculosis. After the age of fourteen, we never see a new case. So if you will divide the life up into these three periods—birth to three years, three to fourteen years, and from fourteen years through the rest of life, you have the stages we have to take care of and treat differently.

The preventive measures must be divided into three parts. What will you do to prevent tuberculosis in babies? What will you do for children? What will you do for adults? Do everything on God's earth to prevent infection of babies, for they are going to die.

Whenever you have a tuberculosis family with a baby, you can do good, but you must do it quickly. We have wasted a lot of time and effort in shutting up adult tuberculous patients. On the other hand, I believe that if we can forget about the adult patients, to a certain extent, and think more about the babies and little children we would get better results—results in the next generation. When it comes to babies you cannot be too particular and demand too much.

The ideal thing would be to take the baby away from a tuberculous father or mother from its birth. This has been proven in cattle. In other words, the infection takes place after birth. It is a direct infection from the mother, so the ideal condition is to take the baby away at once. The tuberculosis father is not as dangerous at first as the tuberculous mother. Whether you can take away the baby or not I do not know. I have asked several people who ought to know, and they think that the judges in this State have the authority to take the baby away if it can be proven that the baby's life is in danger.

In addition to that you must teach your tuberculous families of the danger of infecting the baby. Do not allow any one who is tuberculous to handle the baby. The health of every one in the family has to be watched. In addition to that, the milk supply ought to be watched for there is no doubt that some babies are infected with bovine tuberculosis. You cannot do too much to protect the baby.

When it comes to the children of four to fourteen years you cannot shut them up. You cannot keep them away, and frankly this is not so necessary. You have got to watch that child with the one idea of

preventing his getting a massive infection. The child has to get his immunity in this age when he is running around and coming in contact with his playmates and other people. You want to watch that he does not get too big a dose of germs.

He ought not, under any consideration, to live in the house with tuberculous people; and though it won't kill him then, we believe that the cases who break down in after life are those who get the massive infections in childhood and do not get the lesions healed up as they should. I think we can get better results by removing the child. It is in cases of this sort that the term pre-tuberculous is used; not an uninfected child, but a child who is not feeling well, is not growing right, is not eating right, is running a little evening temperature, is having night sweats, is having a little cough—he has something wrong with him but you can find nothing definite. If you find a child of that sort living in a house where there is a tuberculous patient, send that child to the sanatorium because that is the kind of child we can help.

When it comes to the care of adults we have an entirely different proposition to consider. You have then got a class that is entirely infected. The problem then becomes one of keeping the individual in such good health that he can resist the tubercle bacilli that are in him. If he can resist the ones inside, a few extra bacilli on the outside will not hurt him.

In other words, I believe that if one of us were taken to a South Sea Island or some other place where there are no tubercle bacilli and were to live there under bad sanitary conditions or get some tropical infection such as malaria that would break down our resistance, we would be just as likely to develop tuberculosis there as here. It is the infection from the inside that we need be afraid of in adults, so it becomes a question of keeping up their bodily resistance. The thing you have to rely upon, as far as the protection of children is concerned, is the avoiding of giving them a massive infection. On that account we have to watch and destroy the sputum of these patients. Remember that we believe the infection is from the sputum, and that the infection is a house infection.

Public expectoration is a bad thing and the laws preventing it should be enforced because of the danger of dragging the infection home to the children. The sputum of adult patients, therefore, has to be cared for because of its danger to children. When it comes to ambulatory patients, it will require all our efforts. The ideal way is the use of sputum cups, but people do not like to carry their sputum cups around in public and there will always be a lot of patients who will not do this. In the use of the sputum cup the patient has got to have his mouth pretty close to it so that he does not smear anything on the outside of it.

If there is anyone you should oppose it is mustaches on tuberculous patients. If you get a patient to have his mustache shaved you have done a definite thing in preventing the spread of infection. The other things that you can do with your adult patients are just what you are doing. I do not know how much isolation is possible and advisable in this State. I really think we will accomplish more if we spend our time and effort in getting children out of tuberculous homes, and we will be doing much more good. All the precautions you are taking are good, and should be carried on.

The things that I have tried to tell you are these: All of you who have passed fourteen years have an infection but have built up sufficient resistance to tuberculosis so that you have no reason to fear infection from contact with tuberculous patients; the most serious time of infection is in childhood, and infection in infants is hopeless; from two to four years they have some chance, and from four to fourteen they probably will get well—they are mostly clinical cases; from four to fourteen years the children are getting the infection that ought to protect them the rest of their lives, but a great deal depends on the size of the dose, the surroundings, and care, whether or not that child is going to build up a good immunity; the absolute separation of the baby from the tuberculous patient, the partial separation and control of the child as far as the tuberculous patient is concerned and the watching of the general health of the adult are about all that you need to do.

DISCUSSION.

Q.—At what age is the immunity established?

A.—It is generally supposed that there is a fairly definite immunity at fourteen years of age, but the older the patient the greater the immunity. A baby has no immunity.

Q.—Do you feel that in our public health work particular attention should be paid to the children and an effort made to build up their resistance by a closer supervision than we have ever paid before, particularly in relation to diet and clothing?

A.—Absolutely, it is our one hope. We are fighting something that is universal. We have been fighting to destroy the tubercle bacillus and we have got up against something that we cannot do. So the one chance that we have for doing good is in making the bacillus harmless. We gradually build up a resistance to germs and they become harmless, and the children is the group we have got to begin with, because there is where the immunity should be begun. We should see that their health is so good that they heal up the infection, and build up their resistance. I think we will get some results in the next generation.

Q.—Would you recommend rounding up tuberculosis contacts, that is children whom the dispensary doctors have pronounced non-tuberculous?

A.—You should do everything in your power to get those children out of the house where there is tuberculosis, even though the tuberculous patient is not sick. Instead of getting the patient away try to get the children away.

Q.—Will it not be hard to educate people to taking away the child rather than the sick patient?

A.—Yes. It would be easier to take the sick patient away, but we are doing nothing.

Q.—Don't you think that the worst part of the work is to educate the worker? If the workers cannot see the point, by the time they get through arguing why something else should not be done, we don't accomplish much.

A.—It is something we are not going to get done at once, and something that will be made slower because we have probably been on the wrong track. Here is an infection that everyone has, and here

is a condition that anyone is likely to go down with under bad conditions, and considering the impossibility of isolating all those cases and the impossibility of destroying the tubercle bacillus does it not look more hopeful to build up the resistance of the children of the next generation? All that is necessary is to keep that child away. I would keep that child away from a tuberculous mother forever or at least until the child is fourteen years of age.

Q.—Should a tuberculous mother be allowed to nurse her baby?

A.—Infants of tuberculous mothers should be bottle fed from the first nursing. Ideally, the tuberculous mother should never have babies.

Q.—We have physicians on our staff who recommend that babies be nursed by the mother.

A.—A good thing might be to take up things of that kind at county medical meetings; and the nurses should be invited to attend.

Q.—What is your opinion of tuberculin?

A.—My personal opinion is that it is not very effective. Tuberculin may be valuable in bone or gland cases, but it is not much good in pulmonary tuberculosis. There is so much in the influence of psychic treatment. One of the greatest arguments against tuberculin is that it has been used for twenty years and has not made good.

Q.—How young do you take children in the sanatoria?

A.—Six years is the limit, but we are not arbitrary about it. If you have enough children under that age, send them in and we will make special arrangements for them.

Q.—Is tuberculosis a transmissible disease?

A.—It is a transmissible disease, but it is transmissible only early in life.

DIFFERENT DIAGNOSIS IN PULMONARY DISEASES.

(Abstract) Major M. Howard Fussel, of Philadelphia
(Illustrated by Lantern Slides.)

About two weeks ago your commanding officer asked me over the telephone to attend this camp and I replied that I would, thinking that I had just an everyday talk to give to you. I had not expected that I was to have such an audience and I had not expected that I was to give a lecture.

Dr. Schöffle asked me if I would talk upon some conditions which might be mistaken for tuberculosis. In the first place, I wish to show two slides as generally characteristic of rather advanced tuberculosis of the lungs. I confine myself, of course to tuberculosis of the lungs.

But before I show these two slides I wish to say a few words upon the value of X-ray or fluoroscope examinations in diagnosis of the diseases of the chest. In the first place; have a man to take your pictures and to interpret your pictures who is an expert. It is waste of time and a waste of money to send a case of any character to an X-ray man for interpretation without knowing that you can depend upon it that the findings of that individual will not mislead you.

I have often said that a laboratory inquiry badly done is worse than none, because you depend upon your laboratory method for correct diagnosis. If the interpretation is not correct your are a great deal worse off than if you had not had it done at all.

A man may diagnose a case as one of nephritis; if the laboratory report comes in and says he has albumen and casts, you are pretty sure to say the disease is nephritis. Another thing that you must remember with the X-ray is that a great many of the findings which are of value are due to end results of the condition which exists in tuberculosis.

I wish to begin what I have to say in connection with the pictures with the statement that early diagnosis in tuberculosis of the lungs is perhaps the most important thereapeutic measure which we have in the treatment of tuberculosis of the lungs. (Pictures shown). Series of X-ray pictures shown on screen.

1. Furious pulmonary hemorrhage case. Lesion at the base and not at the top of the lung. Sent to Saranac Lake. A distinct area of infiltration at the base of the right lung. The boy has maintained weight and general good health for two years. Tubercle bacillus never found. If you have a case of tuberculous hemorrhage in which you have signs in an X-ray picture, it is very unusual not to find tubercle bacilli when careful examination is made.

I think this case bronchiectasis. The conclusion finally reached was that this boy may have inspired a foreign body not picked up by the X-ray. Physical signs are almost entirely absent. One important physical sign, namely, a lack of expansion of the site where the foreign body is located, is absent.

2. This slide was shown as an example of a very difficult case in which to arrive at a diagnosis. This patient does not have fever and has none of the ordinary signs of tuberculosis. X-ray examination is very important in this type of case.

3. Best picture in collection, to show a bronchopneumonia, probably also with an empyema. The bronchopneumonia has as its outstanding symptoms cough, profuse expectoration (very profuse often), there is often a fetid odor and the usual physical signs are present.

4. Plate showing extensive malignant lesion over thyroid.

5. Plate showing syphilis of the lung. Infiltration of both lungs. Fibroid; secondary syphilis.

6. Plate showing delayed pneumonia.

7. Plate—tuberculosis can follow a pneumonia but rarely a lobar pneumonia.

8. Plate—absence of pleural effusion. Case in which the X-ray gave no help.

(Major Fussell's remarks were made with the room darkened for lantern demonstration and were not reported in full by the stenographers.)

THE DEPARTMENT'S FUTURE TUBERCULOSIS CAMPAIGN.

Lt. Col. J. D. McClean, Monday, July 7th.

I am afraid that many of this audience missed the opportunity they had a few moments ago of criticising the Chief Engineer. Have you appreciated that from now on all nuisances and conditions of an insanitary nature are to be reported to Mr. Emerson? He will be held responsible. It won't be any one under Mr. Emerson, but Mr. Emerson himself.

We are here on the spot which is known by name, at least, to pretty nearly every one in the State of Pennsylvania in the treatment of the disease which is only too common. What Pennsylvania has done in the past under Dr. Dixon, and well done, is known to the representatives of Health Departments of every State in the United States.

The one criticism from health officers of other States has been that Pennsylvania has been doing a great, big work in the control of tuberculosis, but has not told them enough about it. "We want to know what Pennsylvania is doing," they say. And that is just what we are going to tell them.

Do you know what a big work you are doing? And do you know that the other people are watching what you are doing, and are anxious to know what results we are going to get out of it?

We are at Mont Alto, a name which means much to the fathers and mothers of this State, and we are going to make it mean much more. You doctors and nurses think for a moment of that frail youngster for whom you pleaded for months and months with the father or mother to send him to a place like this, and if that little one is still here go up and see him and then go back and tell the father and mother what has been done. We can cite instances of little folks coming here and going back strangers; the neighbors think it almost impossible because the development has been so pronounced.

The State of Pennsylvania cannot pay too great a tribute to Dr. Dixon, and before him to Dr. Rothrock, for bringing to the people the fight against this disease.

What are we going to do in the future? What are our plans? We are absolutely assured that they are not destructive. We hope they will be so constructive that they will produce results. You all know that some of the dispensaries have been closed, others have been merged, and others have been taken into hospitals. If it is feasible, we hope to adopt this in almost all the dispensaries of the State. Connect them up with a hospital which has and is receiving State aid—a hospital which has already received recognition by the State. Why? We don't feel that it is quite just to the people of this State to take their money, for instance, and pay rent for a building, pay janitor service, pay for heat and light for a building occupied not more than one-tenth of the week. It is not quite fair.

Many of you have been afraid that just as soon as we go to a hospital we will be swallowed by that hospital. That will not be so. The only difference will be that it will be a different place to meet.

We have a State Clinic and not a Tuberculosis Dispensary, and you will be so advised shortly. And that State Clinic, even though it does meet in a hospital, will be a State Clinic and will be manned by a personnel appointed by the State Department of Health. Don't be disturbed that because we are going into a hospital we will lose our own identity. That will not be so.

We have made one radical and very positive change and that is in Philadelphia. It was done very recently. We are trying it, and whether it will be enlarged to any great degree in any other place or not, I don't know—I doubt it. There we have combined two of the largest dispensaries in one building, not as one dispensary for the present, at least. What is the object? They have moved into the old dispensary of the Medico-Chi Hospital. In that building will be established the post-graduate school connected with the University of Pennsylvania where the doctors can go and receive a post-graduate course. We will be a separate State Clinic. We propose to have in that State Clinic an equipment capable of making the most careful scientific diagnosis.

We have in these institutions some cases where tuberculosis does not predominate, and some cases where it does not exist. I am not blaming the men who made these examinations and sent them in, but in some cases the dispensaries were not equipped to make the proper diagnosis. We want to make the State Clinic in Philadelphia so perfect that when a patient walks out of that clinic in Philadelphia he has received the most expert attention possible. We want you doctors and nurses from all over the State to send difficult cases to that State Clinic in Philadelphia for careful examination.

The question immediately arises in your minds "Who is to provide the money to send them?" There is no person in this State too poor either in money or friends to send that patient for expert advice like that. I wish I could say that the State could do it. I am afraid that is too big a problem, just now at least. Another thing that State Clinic will do; it will give an opportunity for our men to go down and spend a week in the intensive study of these cases, just as, at present, we are sending the chiefs of the Genito Urinary Dispensaries to Philadelphia to take an intensive course which is being given voluntarily and freely by men in Philadelphia. The course is so worth while that we are getting requests daily, "Can't I go?" The training is wonderful, and these men are going to rid the State of these diseases, we hope; at least we are going to lessen them and why should we not do this in tuberculosis?

What will you men and women do when you go back home? What is the specific thing for you to do when you go back home? I am speaking to the nurses as well as to the doctors. I have learned in the few months I have been with the department the wonderful influence of the nurses in their communities; how the people look up to you, and how they come to you with questions. We hope that you are always ready to answer them not as the nurse, but realizing when you give that answer that you are the State Department of Health. Now what is that specific thing to do? I have heard you men and women so frequently say that it is not right to send a lot of those old, inactive cases to these sanatoria to stay for years or until they die, and take the places of those who need it and might have a chance.

We agree with you, and the policy of the department from now on is that these cases must not come here, and that they must be taken care of by their own communities. Now as to the specific job! Talk to the officials of your county, borough or city and tell them what it is that the State Department of Health wants them to do—to build a place to take care of the advanced, dying consumptives. Just as soon as you say that, they will ask “How much is this going to cost?”

There is in process of formation now a handbook of information, and it will contain the number of beds necessary in each county, what character of buildings should be built, how much it will cost, and how much it will cost to maintain. Then it is up to you to convince them of its necessity. It need not be an expensive building, but one that will properly house these cases. You know how impossible it is to get many of these advanced cases to come to an institution. First, they do not want to come; and again, the children do not want the father or mother to leave home. If at last you do persuade them and if they do come, at the first visit made by their friends they will want to go home.

Now you may relieve that community or that house from a source of infection, but you do not keep it away. They will want to go back. Therefore, is it quite fair that any of you should urge that a mother should be sent hundreds of miles away from the children, knowing as you do that that mother will always be a source of infection, and knowing that she is going to die before she gets back. Is it fair? It is not. Will their children want them to go so far away? Therefore, you have your lever. First and foremost, the department wants the places now occupied by these patients; second, those sentimental reasons that so often convince people that a thing should be done; and they will do it. We want the places for the children. We have got to take care of the coming generation. Let us have the little folks, not the babies but those of six or seven years up to sixteen, eighteen or twenty.

Should those little folks have a well pronounced tuberculous disease before you send them here? No. If you think that little youngster is in that condition which is called pre-tuberculous, send him. That condition does exist. It means a field for the growth of the disease. Send the youngster of that class to an institution like this. Let us take care of him for four or six months, and we will send that little one back to the home and the father and mother so well that the disease germ will not plant itself and will not grow. We feel that we can lessen the incidence of tuberculosis in these children to a great degree. Let us have the children and do not send us these advanced tuberculous cases that just sit around here until they die or go back just before they die. Make the communities if you can, and I tell you you can, take care of them themselves.

Another subject: You all know that an order has been issued stopping the dispensing of milk. Was that order a good one or a bad one? (A. It had advantages and disadvantages). Should it have been issued or not? Should we go back to the old order of distributing milk ad lib.? (A. No.) That was one of the things that was frightfully abused. We have found a great many evidences of abuse, not intentional, but we did find it in the dispensaries where the doctors and nurses were overworked.

We even found instances where milk was distributed for a year or a year and a half after the death of the patient. There are some

instances where milk should be distributed. Remember, you are the State Department of Health, and you are spending the money. If you have a worthy, needy case that you are absolutely convinced should have milk and cannot get it any other way, let us know and I think we can find some way to see that that milk is properly distributed. Our belief is that the giving of milk is the duty of local charities, and each one should have in connection with your dispensary at least one local charity by which you can furnish milk to those that need it. (Choose one and say to them: "We have a problem which needs solution. Will you provide milk for an absolutely needy family when we make the statement that they are absolutely needy?" Then if you cannot find such an agency, we possibly can help.

We need the money. I will say that the Legislature has been wonderfully good to us. They have said, "What do you want, and what do you want it for?" We talked over our problem with them. We told them what we would like to have, and what we absolutely needed. They have treated us in a businesslike way, and they have given us just what we need. Don't let anybody in the State criticise the Legislature because they have not given money to the Health Department.

DISCUSSION.

In far advanced cases, for a great many years it has not been the dispensary urging them to go, but the doctors and householders. There is no other place for them to go.

A.—The only place for them to go is for each community to provide a place of its own. Build "Something" near home so that these advanced cases will go.

Q.—Do you think Philadelphia needs a place for them to go?

A.—Yes.

Q.—Why do you think so when they have the Philadelphia Hospital?

A.—Philadelphia Hospital is one of the best equipped hospitals in the country, but it is not large enough.

We have the same problem in Dauphin County. The Directors of the Poor have given us a building for the use of the tuberculosis poor, so having one hospital we probably will have trouble to get money for another. We have the assurance that we will in the near future have a contagious disease hospital.

Unfortunately the idea has crept into the minds of the public that local tuberculosis institutions are poor houses, and that obtains and it is a sad thing that it does.

Q.—How should we go about getting that place in Philadelphia?

A.—Induce council to appropriate enough money to build at Ryberry Farms. Some time ago plans were submitted, but they were far too expensive.

Q.—How are we to lessen the number of cases of tuberculosis if the local physicians will not send their cases to the dispensary? Unfortunately I think our profession needs more education than the public.

A.—What you say is so, and yet I am going to say this: Go back to our student days, and can any of you remember that we were given any careful instruction in the diagnosis of early tuberculosis? Don't blame the doctors because they cannot diagnose it.

A.—I don't because they cannot diagnose it, but because they don't send in their cases.

A.—I am sorry that this question was brought up. I can say this, and this is the result of real experience, that there are no better educated doctors in the world than those in the United States. In reference to the diagnosis, there is no excuse for the doctor having a patient come into his office time after time. There is no excuse for that doctor putting his ear down over a great bundle of clothing. If that doctor does not strip that patient to the waist and make a thorough examination, that doctor is a criminal.

Q.—I am interested in this question of mistaken diagnosis, and as this is a mutual affair I want to know why it would not be a good idea when we send a patient to a sanatorium, if we make mistakes, that these men should let us know?

A.—The plan from now on will be this: Every patient sent from a dispensary is to have his records follow him to the institution. After you examine a patient at the dispensary, and that patient is sent to Mont Alto, the records you have made come with him, and the records of examination made here are compared with those records.

Q.—Are you in favor of the dispensary doctor after an examination and finding that a patient has tuberculosis, telling that patient of his true condition?

A.—Yes. But be sure that it is tuberculosis.

Q.—I am much disturbed at the attitude you take with far advanced cases. If we have no place to put them, and the State will not take care of them, what are we going to do with them?

A.—I did not say that we would not. I said I hoped the counties would take care of them.

Q.—Would it help in the prevention of the disease if more attention were paid to the history in schools when the medical inspector of schools is making the examinations, and have the work followed up from that period?

A.—It would help and help very much, indeed. That is not any more than an early diagnosis and control of a transmissible disease.

Q.—Should the State of Pennsylvania exercise its right, if it has it, of quarantining the advanced cases of tuberculosis?

A.—Yes.

Q.—Just how rigid should that quarantine be?

A.—Strict isolation.

Q.—Does the Department of Health have the right to quarantine tuberculosis?

A.—We will have that right if the Governor signs a bill now before him, and we have every reason to believe that he will. This is a Department Bill—a bill which gives the Commissioner of Health with his Advisory Board the right to determine whether a disease is transmissible, and provide rules and regulations for its control. This is a great big strong lever in the hands of every one of you. If a situation exists in your county, let the central office know about it. Send your recommendations through with your report. You are on the field. It is your problem. Therefore, tell us what you would like us to do.

Q.—In regard to the counties looking after the advanced cases—each one of our counties will want to build on their poor farms.

A.—Let us hope that we can convince them that the care of tuberculosis is not a poor house problem, and should not be treated as such.

THE DUTIES OF A TUBERCULOSIS DISPENSARY NURSE.

Captain Thomas Klein.

Miss O'Halloran has not assigned me any subject so I shall take "The Duties of a Dispensary Nurse," pointing out the principal things that should be done by the nurse as she goes into each home.

First of all, may I say that the duty of every dispensary nurse is to help the physician in the dispensary? Under that help come first of all a complete inspection of the home; finding out the exact condition of the patient; the condition of the room she occupies, whether in an insanitary condition or not; the conditions under which she is living; the amount of ventilation in that room; the amount and kind of clothing the patient has; whether or not she is occupying a separate bed which is a most essential thing in families where there are children. Instruct her again as to the care of her sputum and to the dangers of being in immediate contact with the rest of her family and especially against the handling of her children.

Those are the principal things. Of course, it is unnecessary to tell nurses that have been in this work the dangers of immediate contact of mother and children. As Colonel Jackson stated, the droplet of infection is the most dangerous part of it. There is generally no danger while the patient is breathing naturally; only when she is coughing. As she coughs she throws off particles of secretion or droplets that spread infection for a radius of about four feet. In that droplet is contained the tubercle bacilli.

These droplets fall on the carpets, rugs, or adhere to the wall; then the baby or child will come in, crawl on the floor, get the secretions on its hands, and immediately put them into its mouth. From the mouth it passes to the stomach, thence to the intestines, and will pass by way of the lymphatics to the lymphatic glands where this infection will remain dormant. Another source of infection is this: as these droplets dry, the particles of dust will be inhaled. These pass into the lungs or adhere to the walls of the tonsils where they again enter the lymphatics. They will continue downward and the mediastinal glands will be involved also. Again, they may not adhere to the walls of the tonsils or pharynx and pass into the system that way but may be inhaled directly into the lungs themselves.

Here again we do not get direct infection of this lung. As these tubercle bacilli are breathed, we do not get any lesions where they come in contact. Now what happens? These tubercle bacilli will pass through the mucous membrane lining the entire lungs without producing any lesion, pass down into the lymphatics and will reach the mediastinal glands, remaining there until the child has whooping cough, measles, etc., which break down his resistance to disease; then they will light up and travel to the lungs and he develops a rapid case of tuberculosis. To prevent this, we must caution the mother as to the danger of fondling the child. Teach her to hold paper to her mouth every time she coughs, so as to prevent spreading infection.

Yesterday at one of the clinics it was stated by one of the men that the far advanced cases were the most dangerous. Relatively,

that is true; but an early case is just as dangerous as a far advanced one; it all depends upon the presence or absence of tubercle bacilli in the sputum. Secondly, the child practically always receives infection before the fourteenth year of age, male and female equally. This is not in the form of pulmonary but lymphatic tuberculosis. When you see children with enlargement of the mediastinal glands, look upon them as cases of pulmonary tuberculosis because as they grow older they may have pneumonia, or in the case of a girl she may give birth to a child, or a man, may do too heavy work, then the lymphatic gland infections have an opportunity to re-light. The infection spreads to the lungs themselves, giving us pulmonary tuberculosis.

So it is the intention of the department to take care of this type of child; and if the time comes when we get local hospitals to take care of the local cases of tuberculosis, both moderate and far advanced cases, places like this can be used as a preventorium for pulmonary tuberculosis. In that way we are going to stop the vicious circle of re-infection of all these cases. Therefore, you must have quarantine stations for the protection of your child. Take, for example, a family consisting of the mother and four children where the husband and father has tuberculosis.

Do you ever stop to consider that those people have been living for months, or perhaps years, in contact with an active case of tuberculosis? In that family instead of having just one case you have potentially five, because the children are at the stage when they are most susceptible to the infection. As you all know, it is very hard to infect an adult with tuberculosis. A man or wife may live together for fifteen or twenty years, the one being infected with tuberculosis, and the other may remain free from infection.

This point should always be borne in mind, especially now that a movement is being started for localized quarantine stations. Every locality of 35,000 people should have at least one local hospital or one quarantine station for advanced cases. The most essential treatment of tuberculosis is rest. Food and air come second and third.

The most essential thing is rest, and patients can get that just as well in their own local community as at Mont Alto, Hamburg, or Cresson. As long as they are running any temperature or coughing and expectorating they are a source of infection to the community.

Next we will take up the question of the patients themselves. They should at all times be at rest if they are running a temperature. If a patient is running a temperature of 99 degrees in the afternoon, there is an active tuberculosis process going on in his lungs, and he should have rest. Early tuberculosis gives the patient a rapid heart; the nurse can often detect this. Most dispensaries are held in the morning, and at that time the temperature is not at its height. When the patient comes to the dispensary his pulse is sometimes rapid, but allowance must be made for excitement.

These three conditions the nurse should watch: pulse, respiration, and temperature. If the temperature is high, rest in bed is the only thing. The patient should be put in an airy, sunlit room. Sun light will do a lot for the tuberculous patient. The bed should, of course, be clean; the patients should be amply clothed because they are

under nourished and their vitality is lower; and they are going to need more clothing than ordinary individuals. They have an infection going on which is burning up their tissue and, therefore, need more blankets than the healthy individuals.

If the patient is having night sweats, an alcohol rub will be grateful to the patient. Of course, this is going to be hard to get from now on, but if you cannot get alcohol, the use of vinegar or acetic acid in the bath will tend to harden the skin and dry up the moisture. The nurse does not have to do this. She can instruct some member of the family to do it.

As far as diet is concerned, the idea of a milk and egg diet has been abandoned. First, a great many patients cannot afford to buy milk and eggs; second, they soon tire of a forced diet; and, third, a good many patients get an idea that they were taking a substitute diet. For example, a patient who was taking one quart of milk and three, four, five or six eggs a day was getting no more calories than if he were eating at the table. They soon tire of it and are not getting any more value than if they were taking two wholesome meals a day.

Let your patient have anything his appetite calls for—every case type calls for different diet; and let him have milk and eggs between meals if it does not spoil his appetite but do not substitute milk and eggs for a more wholesome diet. In the line of diet the things to be avoided are the things which tend to upset the stomach. Excessive use of sweets tends to cause diarrhea and will take away the appetite. It is a good practice to keep down the sweets. Fruits are all right. In some cases the coarser vegetables which are relatively of no food value cause damage by setting up enteritis. These things should be governed by each case.

One-half of the coughing in tuberculosis could be suppressed by the individual. It is unnecessary to cough every time there is an irritation in the throat; they should make an effort to suppress it because by decreasing the cough you will be saving the patient's energy and reducing the possibility of infection of others by keeping down the droplets which are thrown off by coughing.

Of course, the floors in the patient's room should be made free from carpet because, irrespective of how careful the patient may be, the sputum paper is going to fall on the floor. So it is best to have the carpet taken up and then the floor can be mopped up with cresol or some disinfectant which will sweeten the room and make the patient feel better in every respect.

Then in addition to this work in the family, you should inquire into the diet. Do not try to urge them to buy the most expensive foods. The inexpensive foods are just as good, if carefully chosen. Alcohol should be curtailed at all times, with but a few exceptions. If a man is far advanced and has been used to whiskey, and if you can get it, do not deprive the poor fellow of his drink. I have even said that in advanced pulmonary tuberculosis there are only two drugs of any benefit, morphine and whiskey. Morphine promotes rest and sleep, and whiskey stimulates the appetite and prolongs life.

Now, going from the patient to the members of his family; we should at all times insist upon the members of this family coming to the dispensary for examination. You are going to find a lot of

them who will say "We are going to a private physician." That is all right but if you can do it diplomatically, urge them to come to the dispensary, because at the dispensary the physicians are trained in the diagnosis of pulmonary tuberculosis.

There is no disease more difficult to diagnose than pulmonary tuberculosis because of similar symptoms in other disease and it is a sin to brand a man as having pulmonary tuberculosis when it may be heart disease or kidney trouble. So urge these patients to come to the dispensary to be examined by men who are specialists and are especially trained for this work. I believe that the time is coming when undernourished anemic children living in such families will be taken to a place like Mont Alto, a preventorium, to stay four or six months. We cannot keep them for a longer time. We can build them up and teach them how to live and then they must go out and let others come.

If the family are in such poor financial circumstances that they are unable to supply the right kind of food, if they are unintelligent or are foreigners and cannot understand or carry out quarantine in a strict sense of the word, then by all means I would try to remove that patient to a local hospital or county farm wherever possible. By doing this you are preventing the spread of infection.

Fifteen or twenty years from now cures are going to be things of the past. All medicine will be preventive. If you cannot remove the patient then try to get the local authorities or civic organizations to supply the needed food. This will be too great an undertaking for you to carry out so, therefore, entrust part of your work to civic organizations. Most small towns have Red Cross Chapters and woman who are anxious to do civic work. Turn over part of your work to them. Have them send a woman to inspect the house several times a week and pay special attention to the food and diet of the patient.

These advanced cases should be put in local hospitals and not sent here to Mont Alto, far away from home, to die. You know a tuberculous patient is the most optimistic person on the earth. When they see other patients dying around them, it breaks down their optimism. That is the trouble with our Hamburg sanatorium. It is only for advanced patients.

You know about the different forms of follow-up work probably a great deal better than I do, and the whole thing I am speaking of is simply that of helping out in the dispensary and making your work more efficient from every standpoint.

Don't be afraid to try to make your patients clean up their homes. Show them how it should be done and in many cases they will carry it out themselves. The people you come in contact with are in many cases of low mental capacity. They don't know what a clean house is, so help them to clean up. Now that prohibition is on the alcohol question will be a thing of the past and we will not have to deal with it as much as in the past.

Now is there any other topic you would like me to touch on?

Miss O'HALLORAN.—In reference to the follow-up work, do you think it is of value?

A.—Yes, I do.

Q.—How soon after a patient leaves the sanatorium should a nurse follow up that case?

A.—She should visit that case immediately, noting the condition that man is in and noting also his living conditions and exactly what he intends to do. A patient goes home from the sanatorium and dissipates and in a few weeks undoes all the good that has been done in months of treatment. Visit that patient and tell him we are on the job to keep him on the right path. If you just discharge him and show no further interest in him, he will soon drop back into his old ways. If the patient wants to go to work, have him come back to the dispensary for examination and if he is able to work the nurse can again do her bit by getting some social service worker or some civic organization to place him in a position where life will again be made interesting for him. The patient feels the stigma of tuberculosis and work removes some of this stigma.

Q.—Is six months too long to wait for your first visit?

A.—Yes.

Q.—What is the type of work for a discharged patient to do when he is able? Should he return to his former occupation or something like it, suppose he was a clerk?

A.—If he was a clerk and had been to the sanatorium and was discharged as an arrested case, or as cured, I see no harm in his going back to his old work. The essential thing about a sanatorium is that it teaches a man how to live, and a man who has been here for treatment should go back with an idea of the better principles of living.

Q.—Then it is not really a question of the type of work, but their food, environment, and hygienic conditions?

A.—Yes; that is provided that employment is not so laborious as to burn up his energies.

A.—We have not paid as much attention to that as we should. The theory has been that a returned sanatorium patient should be out-of-doors.

A.—That is necessary but the principal thing in the treatment of pulmonary tuberculosis is rest. That is fundamental. All the air in the world will not cure a man of pulmonary tuberculosis if you allow that man to go about and exercise strenuously. He must have rest—physical, mental, and pulmonary. The reserve strength that man has gained at the sanatorium will keep him well. Any condition, whether it be in the shop or in the open air, that destroys that reserve strength which he has gained here will break him down again.

Q.—Would you suggest that the nurse advise the mother as to periods of rest during the day that will not interfere with her necessary work, say from 10:30 to 11:00 in the morning, and from 3:00 to 4:00 in the afternoon?

A.—Yes. The most important period of rest should be in the afternoon. During the morning her reserve strength is lessened by her house work and it should be built up during the afternoon. If she can rest in the afternoon her body will regain a portion at least of that reserve strength but if the patient is expectorating tubercle bacilli she should not be allowed to associate with her children.

Q.—That mother may have tuberculosis, but she has children who are of school age, say seven, eight, or nine?

A.—The thing to do is to put that mother in a local hospital and if possible, to put the children in a boarding home where they can get the proper food, care, and supervision. First of all, have them

examined at the dispensary to determine whether or not they have tuberculosis. If the father is not doing his duty there is the municipal court to take care of him.

Q.—Do you think it is a good thing to separate the children and relieve the father of that responsibility and put it on an institution?

A.—We do, because if we allow that family to continue we are certainly going to have five cases of tuberculosis where we now have only one. We cannot consider to-day alone but the next generation. By insisting on this separation, we will have a marked decrease in tuberculosis. We now have a certain proportion of cases of tuberculosis in children of twelve to fourteen years of age, and the next crop will be just as great or greater than at present.

We are not going to see any marked decrease in tuberculosis immediately, but those of the next generation will see it. We must begin with quarantine stations. How many cures have we had in tuberculosis? The percentage is not as high as statistics show. In a sanatorium of this type there are 18 to 25 per cent. who are not tuberculous. They are discharged as cured cases. They never had tuberculosis and as a result of this fact our statistics are too high. Before you break up a home make sure that the disease is tuberculosis.

Q.—The mother would rather do anything in the home than go to an institution. Do you still feel that if the mother is careful and does everything she is told that it is wisest for her to go away? She is not contented. The children are still on her mind, no matter who is taking care of them. There are very few mothers who stay four months.

A.—I think that by personal education of the mother and pointing out the dangers as I have here and by informing her that she is shortening the lives of her children, she will awake to the sense of responsibility which a mother cannot help but feel, particularly if she realizes that her condition is such that she may destroy the lives of her children.

Q.—How many nurses find mothers willing to go to a sanatorium?

A.—Very few, except in Philadelphia. Philadelphia is better equipped to take care of the children while the mother is away. Sanatorium treatment is first talked up in the Philadelphia dispensary but in 99 per cent. of the dispensaries over the State it is not.

A.—There is only one place to send advanced cases and that is to a quarantine station. Why should we not quarantine tuberculosis as well as smallpox? How many deaths does tuberculosis cause in Pennsylvania. Nine or ten thousand each year. We are in a vicious circle of infection, and the only way to break this circle is by quarantine. The infector must be placed where he cannot infect young children. If you have a home where there are no young children, and the man or wife will take proper care at home, there is no reason why they should come to a sanatorium.

Q.—Don't you think we have conditions that are not prevalent elsewhere? We have a tremendous floating foreign population in the interior districts of the State. Their one idea of a hospital is death. It is very hard to convince them of the value of sanatorium treatment.

A.—I don't know how to solve that unless it is simply a matter of keeping after them. Don't you think that the nurse should make

an inspection and then make recommendations to the local health authorities? Local conditions ought first to be taken up with the local board of health; then if they don't do anything, take it up with the County Medical Inspector. Coöperation with local health boards in the future should come through the County Medical Inspector.

Q.—What are we going to do with our cases until we get local hospitals?

A.—They must still come to the sanatorium until you get local hospitals to take care of these cases.

Q.—If the first three or four weeks after the patient returns from the sanatorium are so important, why should not the nurse go to the home and make an inspection before the patient gets there, and the patient's release from the sanatorium depend upon whether proper arrangements for his return have been made in the home?

A.—That will be practical in cases that are discharged, but not with patients who desert. We have 19,000 cases on our dispensary records and as many of them leave without permission it is impossible to keep track of them.

FREQUENT ERRORS IN DIAGNOSIS OF TUBERCULOSIS.

Captain Thomas Klein (Lantern Slides).

I am going to try to make my remarks this evening as general as possible, but it will be absolutely necessary to refer to scientific names at times.

The first condition I am going to take up is hyperthyroidism, a condition in which we have an increased metabolism caused by excessive secretion of the thyroid gland. There are three times in life when this condition exists; the first is at the time of puberty, the second at the age of eighteen or twenty in both sexes, the third condition we find in women at the time of childbirth. This last time however, it is more of a simple enlargement of the thyroid gland. This condition simulates tuberculosis because of the fact that first of all the patient loses weight; at times this is quite marked.

Pulmonary tuberculosis is first diagnosed, and should be, by the history of the case. The most important symptom is blood spitting; by that I do not mean blood streaked sputum, but a frank hemorrhage, the loss of an ounce, two ounces, or more of blood. In 95 per cent. of the cases you will find this to be a sure sign of pulmonary tuberculosis, but when a patient says he has hemorrhages, be sure to determine whether or not they are frank hemorrhages, and whether they occurred from the nasal passages, or whether the patient coughed the blood, or whether it came by vomiting and therefore perhaps from a gastric ulcer in the stomach. Blood that come from the lung is rather frothy and bright red in color, while blood coming from the stomach is discolored and free from bubbles or air.

The next symptom of importance is the cough, and yet this can be suppressed and the patient may get along in a great many cases without cough.

The third symptom is a rapid pulse. In all cases of early pulmonary tuberculosis we have an overactivity of the heart.

The fourth symptom is loss of weight.

Night sweats occur in some cases early in the disease, but all night sweats are not due to pulmonary tuberculosis. In the afternoon the temperature as a rule runs up to 99 or 100 degrees but rarely in early cases, unless there is an acute infection.

In hyperthyroidism we have increased metabolism, with loss of weight, and with this also a slight elevation of temperature. In a great many cases of hyperthyroidism we have in the mouth diseased tonsils, or pus around the teeth; that may be the cause. With this focal infection of the tonsils or teeth we have a direct extension along the mucous membrane giving pharyngitis; with this we have a cough, thus simulating the process of tuberculosis. With hyperthyroid cases we have an increase in the pulse rate as in tuberculosis.

The complete picture presented shows these two processes to run along parallel lines; loss of weight, elevation of temperature, increase in pulse rate, cough as a result of focal infection in upper respiratory tract—the conditions are identical. Upon inquiring into this patient's history we find one clinical symptom of importance, that of

blood spitting, absent. We find upon examination of this man's chest a small enlargement of the thyroid gland, not marked, but slight. Remember it is not the large thyroid that hangs way down that is the toxic thyroid, it is the little fellow that causes the disturbance.

Q.—Can you always feel the thyroid in these cases?

A.—In the majority of cases, yes.

Q.—Do all tuberculosis patients in the early stages spit blood?

A.—No.

Going back to hyperthyroidism, you will find in these cases a very fine tremor of the fingers. This is absent in pulmonary tuberculosis. Going to the eyes in a late process of hyperthyroidism, we find eye symptoms but these come very late. One test is that of having your patient look up and follow your finger; on doing this you will note an inability of the upper eyelid to follow the eyeball. There is also a lack of convergence of the eyes in late cases of hyperthyroidism.

The whole process must be differentiated by the closest and most careful interpretation of the history of the case plus a very careful examination of the lungs. These cases are often sent to the sanatoria as cases of tuberculosis. When they receive instructions to come they are ordered to have their teeth cleaned thoroughly, thus clearing up the pus around the teeth; then they come to the institution and get good food and rest which is the ideal treatment for cases of hyperthyroidism. Of course the patient gets well but that patient comes back with the stigma that he has had tuberculosis and his life will be handicapped to a certain extent by having had pulmonary tuberculosis at one time.

Q.—How many cases of this kind did you see?

A.—In the dispensary they are common and in the army we saw a good many of them.

Cases of disordered action of the heart are the kind we usually get in young people; people of the draft age and still younger. We find them in private practice from about fifteen years on. This is again a case which simulates tuberculosis. They are the long, thin chested people whom we have thought for a long time were predisposed to tuberculosis. They are the people who are thin and who as a rule carry with them a secondary anemia; they will lose weight rapidly, take cold easily, and are of the type everyone looks on as delicate young men or women.

In these heart action cases we have a sympathetic nervous system which is at fault. We have a patient who complains of pain over the region of the heart, perhaps leading down the inner side of the arm, and in the neck. He will complain of dizziness, shortness of breath on slight exertion, loss of weight, and that his hands and feet are always blue and wet with perspiration. His mental state is that which you might describe as "one who is over-anxious about himself" and a great many of these cases have been diagnosed as neurasthenia.

In this type of case we always rule out all focal infection, but the thyroid should be looked into with great care. On examination we find a heart that is normal in size but over-active, and you will notice that during the examination drops of perspiration will exude from the patient showing an over-activity of the sweat glands. The heart is very active, beating at a rate of 100, or even 180 or 200, with precordial pain, and the patient will always complain of hypersensitive-

ness upon slight exercise, and a great deal of nausea. If you put this patient through an exercise, having him hop on one foot for a short time, you will find that the heart action will increase from 100 to 180 or 200, the blood pressure which was about normal will go up to 20, 30, or 40 millimeters, and the patient may even fall over, after 100 hops on one foot.

If you lay this man down however and allow him to rest two minutes, you will find his cardiac responses to the exercise are good in the majority of cases; by this I mean that the heart will slow down to the rate it was prior to the exercise, or even slower, and the blood pressure will again resume its normal state. This type of case from the treatment standpoint is not the type which needs rest. Cases of this kind will do better under exercise than any other type.

Just now we are having a great many of these cases referred from the Federal Board; they complain of pain in the chest, loss of weight, and rapid heart action and the Federal Board is sending them to us for an opinion. Here again we can check up the symptomatology of such cases. Mentally these patients are susceptible to sympathy and they should not be allowed to dwell upon their own physical condition.

The next condition which leads to frequent errors in diagnosis, principally because of the blood spitting, is the early cardiac disease of Mitral Stenosis. We find in this disease a history of blood spitting, and the patient is short of breath. Upon further inquiry into the history of this patient we find four or five conditions; he has had acute arthritis, or during childhood he has had pyorrhea or frequent attacks of tonsillitis, or scarlet fever. Upon physical examination we will find evidence of involvement of the right upper lobe. If we do not bear in mind the physical conditions which result in a case of mitral stenosis this may lead to a mistaken diagnosis.

During the last few years there have been a great many conditions of the lung, which as a rule have been post-pneumonic or post-influenzal, diagnosed as pulmonary tuberculosis and sent to the sanatoria. The majority of these cases have been those which present signs at the bases rather than at the apices of the lung.

Some time ago I had a patient that was showing a loss of weight; his heart was rapid; he was coughing and expectorating; examination showed the apices to be clear and presenting no evidence of infection of the area in the past. About 98 or 99 per cent. of these cases are non-tuberculosis; they are as a rule comparatively free from temperature and are not toxic. On the other hand there may be a basal condition which is tuberculous. There are two things to remember in making an examination of such cases—(1) the apices are always clear, and (2) the bases show areas of bronchial pneumonia.

Upon turning these cases up-side-down allowing the secretions to drain from the bottom of the lung you will find one of three organisms. You are going to find the influenza bacillus, the pneumococcus, which is of non-virulent type, or a very low grade of streptococcus. This type of case will clear up; they do not need sanatorium care although they are very frequently sent to the sanatorium.

In a great many cases the trouble followed the recent epidemic of influenza. The epidemic increased the number of cases last year. Old tuberculosis cases that had been healed up got an acute infection on top of the old infection and this resulted in a breaking down of the resistance of the patient.

Next I want to talk about the gas cases. No doubt we are all going to have a number of gas cases coming under our care; they are soldiers and we are going to be anxious to care for them and some of these cases may get by us. A great many of these men are coming back to this country with a diagnosis of gas who were never really gassed at all.

The chlorine gas cases will probably complain more of pain in the chest and cough than any other type of case. They show upon surface examination that the lungs are filled with many kinds of rales throughout, from top to base; they do not as a rule run a temperature and the pain in the chest and cough is what they complain of more than anything else. Rest and forced feeding seems to do them more good than anything else and they will gradually clear up.

The phosgene gas and mustard gas cases are of a different type and are the most dangerous. A soldier might be admitted to a hospital and after a period of a week or ten days, if this condition had been severe, he would begin to show an elevation of temperature, the temperature running to 100 and then gradually increasing to 104 or 105 degrees. With this he would develop a slight cough. Upon physical examination we would find evidence of a very severe bronchial pneumonia; here in most cases we would find also a pulmonary edema. These patients would run along for three or four days and then die, their lungs seeming to have been entirely burned up.

Gas has had very little influence on the frequency of tuberculosis; in fact gas cases as a rule are not tuberculous. On the other hand however, some of these cases have very interesting laryngeal conditions.

The next condition is aortic aneurysm. In this condition we have a pressure on the recurrent laryngeal, giving a persistent cough. The patient complains of pain in the chest and with the cough there is an expectoration. The patient, in many cases, also shows a loss of weight. These cases will give pulmonary findings if you do not watch out for the heart.

In a case of aneurysm we find an increase in the diameter of the aorta; as a result we have a compression of the lung on either or both sides. These cases, as you know, practically are all syphilitic and whenever you get a history of a case which is syphilitic watch out for aneurysm, especially if the patient is more than 35 or 40 years of age. In a far advanced case of aneurysm you may get a frank blood spitting and a great many of these cases bleed to death.

Just one word about malignancy of the lungs. It is not an infrequent condition; it is always a secondary process and whenever you have a malignant condition in any other part of the body be sure the lungs are not secondarily involved. The physical findings may be either those of a collection of blood or those of a frank pneumonia, depending upon the size and type of the malignant growth.

CLINICAL CONFERENCE—LUPUS.

Dr. Jay N. Schamberg, Professor of Dermatology, Jefferson Medical College.

The occurrence of cutaneous eruptions among tuberculous patients has a different incidence in this country and abroad. If one stays for any time in the capitals in the foreign countries one sees large numbers of patients with the skin diseases of tuberculosis, and particularly in the large hospitals of Berlin, Vienna, Paris, and Copenhagen.

In Copenhagen there was a method of treatment developed:—It was the use of a large powerful light, thirty thousand candle power, with the heat rays filtered out. In a short time Copenhagen became the Mecca for patients suffering with tuberculous lupus. One had to wear dark glasses to protect one's eyes from the intense light. The treatment was very difficult, and has been abandoned to a great extent. These diseases, however, are uncommon in this country, particularly among the native born.

There are several types of lupus: One attacks the skin about the nose, the condition spreads slowly and after several years may cover the face and sometimes the body. That is the true tuberculosis of the skin. Then there is another form of which the patient who will be shown to you is a type. There is considerable doubt in the minds of specialists about this disease. I believe it is related to the toxins of the tubercle bacillus or to the tubercle bacillus itself. It is seen in dissecting room attendants, students of pathology, butchers, and men who work in raw beef. It is called warty tuberculosis of the skin. There is not much tendency toward diffusion of the eruption over the body. A very good treatment is painting with iodine.

Then a form more rare than either of these is the so-called acute miliary tuberculosis of the skin. It occurs sometimes in association with miliary tuberculosis of the other organs.

I also want to mention one type of the so-called "scrofula." It is a vague term but is used in indicating the cases that have their origin in the glands.

This young woman has been in the institution for two years and the history on the chart shows pronounced lesions. You will note the redness upon the nose and cheeks. Here we have an extremely adherent scale, peculiar in character in that it has the characteristics of the scale and the crust. In this particular case it is a combination of the scale and crust, and as you lift off the scale or crust you find little specks coming out of the oil glands.

We have here almost a butterfly patch—lupus erythematosus, not true lupus but red lupus. It is a very rebellious infection, but does not rise to any other disorders. It is not the rule that this infection should start so early in life. Many patients are not troubled by itching, but in this case there is considerable itching. The eruption is present also on the hands. She has little itching scars which show the location of other lesions. It strengthens the belief that red lupus is closely associated with tuberculosis. It is an extremely indolent

character of eruption and can be distinguished from eczema because of this and because it is always dry. There are nodules, but never any ulcerations.

As to the treatment of these cases, it must vary depending upon how much inflammation is present. The best remedy is a prescription containing resorcin, salicylic acid, picric acid, lanolin, and vaseline; and the use of iodoform pills of one grain each. The best local application, if there is less inflammation, is freezing the skin with ordinary carbon dioxide. After thirty seconds you get a distinct reaction due to the influence of the cold on the blood vessels.

(Abstract.)

DISEASES OF THE CHEST OTHER THAN TUBERCULOSIS.

(Lantern Slide Pictures.)

Thomas McCrea, M. D., Professor of Medicine, Jefferson Medical College, Philadelphia.

The recognition of chronic pulmonary tuberculosis is generally regarded as a simple matter in which there is slight chance of error. That this is not always the case is quickly recognized by any one who has the opportunity of studying a series of cases of advanced pulmonary disease.

It may be asked what difference an error makes if the patient has some chronic disease. In some of the conditions, for example, bronchiectasis, it is evident that no great harm will be done; but in others valuable time may be lost and a condition left untreated which might be helped.

Syphilis and the presence of a foreign body in the bronchus are examples of such a condition. In addition such patients are occupying beds which might be more usefully employed.

In discussing errors in diagnosis, we must realize that every one makes mistakes and we should be charitable to the other man concerning those he makes, but very severe in judgment on our own. The important lesson is to try and reduce the number of errors. There is always a chance of error in a clinical diagnosis, but we have a check in the necropsy results.

Cardiac and Cardiorenal Disease.

These are cases in which a proper diagnosis might give a chance of benefit, in some cases at any rate. The reasons for error are very evident and first among them we must put careless and incomplete examination. These are the cases in which there is the least excuse for error. Failing health and strength, dyspnea, cough and the finding of râles in the chest were the features which are wrongly interpreted. A proper physical examination and a study of the sputum should prevent such mistakes.

Chronic Inflammatory Conditions in the Lungs, Usually Associated with Some Form of Pneumonic Process.

There is usually an associated general bronchitis. It is evident that in this group there are difficult problems but because of these difficult problems more care should be taken. Unresolved lobar pneumonias and atypical bronchopneumonias will call for careful diagnosis.

Slow-clearing basal pneumonia will occur and it is well to remember the rule that basal processes are rarely tuberculous.

In the subacute and chronic nontuberculous pulmonary infections the composite clinical history of a group is somewhat as follows: Patient has cold with slight fever, feels ill but continues at work; may

be compelled to go to bed for a few days; diagnosis of bronchitis or influenza made; fever declines after a week or more but afternoon elevation to nearly 100 degrees may continue; cough and expectoration continue and hemoptysis may even occur but constitutional symptoms subside. Examination reveals more or less lower lobe dullness, diminished breath sounds and many fine crackling râles; vocal frebitus increased; tubular breathing unusual. Sputum examination is negative for tubercle bacilli but shows increase of other organisms, numerically. Differentiation rests on consistant lower lobe localization, extensive physical signs and minimal constitutional symptoms, roentgenogram, absence of tubercle bacilli and more rapid disappearance of signs and symptoms than would be possible in tuberculous lesions.

Bronchiectasis, Usually with marked Fibrosis.

Reason for error is easily understood, if diagnosis be made on physical signs and sputum study be neglected. These cases are apt to be sent to sanatoria with the diagnosis of advanced pulmonary tuberculosis.

Foreign Body.

The diagnosis of a foreign body in the lung may be based on the "tissue paper" râle if it occurs in an area no greater than two inches in diameter.

Pulmonary Abscess.

Apparently the general features, fever, emaciation and sweating with the physical signs in the lung are relied upon for diagnosis too frequently. Sputum which is persistently purulent and does not contain tubercle bacilli is strong evidence against tuberculosis.

Emphysema and Chronic Bronchitis.

Errors are caused by relying on symptoms and signs and neglect of sputum study.

New Growth.

Errors are due to same causes as in two preceding groups of cases.

Syphilis.

At present there is a craze in some quarters to diagnose syphilis of the lungs on rather slight evidence. Conservatism in making this diagnosis is in order.

Aneurism, Anthracosis, Bronchial Asthma and Empyema.

In aneurism the diagnosis, while suggested by symptoms and signs, should be made only by roentgen-ray examination. Anthracosis cases are often sent to hospital as tuberculosis but should be readily recognized. Again, sputum study is imperative. The cases of empyema apt to be misdiagnosed are the interlobular cases and here diagnosis is difficult and without sputum study may be impossible.

The great safeguard is examination of the sputum. How many negative sputum examinations are necessary before tuberculosis can be excluded?

Six negative examinations are said to be enough but we suggest more.

In the advanced form of tuberculosis we should never make a diagnosis of tuberculosis unless tubercle bacilli are found.

If the mouth be thoroughly cleaned before taking the sputum specimen, fewer cases of streptothrix will be found.

There is a lesson for sanatorium physicians. In any institution dealing with patients with chronic disease it requires constant effort not to rest content with a diagnosis once made. We are too likely to accept a diagnosis of advanced pulmonary tuberculosis as one not requiring special care to make and, when once made, not needing revision.

How many patients there are to-day wrongly regarded as having advanced tuberculosis, no one can say: but they are not few.



CONTAGIOUS DISEASES AND CONTAGIOUS DISEASE HOSPITALS.

EXOTIC AND PARASITIC DISEASES.

HOSPITALS FOR CONTAGIOUS DISEASES—(Discussion)—
Lt. Col. Thomas W. Jackson, Assistant to the Commissioner
of Health.

THE EXANTHEMATA OF ACUTE CONTAGIOUS DISEASES—
Dr. Jay N. Schamberg, Professor of Dermatology, Jefferson
Medical College, Philadelphia.

SOME PHASES OF DISEASE CONTROL WITH SPECIAL REFERENCE TO MALADIES RARE OR INFREQUENT IN PENNSYLVANIA—(Discussion)—Lt. Col. Thomas W. Jackson, Assistant to the Commissioner of Health.

MOSQUITO ERADICATION AND PARASITIC DISEASES—Dr. Damaso Rivas, Pathologist State Laboratory.



HOSPITALS FOR CONTAGIOUS DISEASES.

By Lt. Col. Thomas W. Jackson, Assistant to the Commissioner of Health.

I shall offer no argument in support of my opinion that so far as is possible, all contagious diseases should be treated in hospitals, city, county, borough or township, as the case may be.

The modern trend of thought towards hospitalization is well known and generally admitted and the reasons therefor are obvious. Certain questions such as the means whereby communities may secure these hospitals at once arise and I invite your attention to the fact that we have some enabling State laws. One was passed by the last Legislature and one by the 1917 Legislature and I will refer briefly to them in a moment.

In order to fulfill their function in the fullest degree, contagious disease hospitals should receive voluntary patients, free patients, private pay patients and certain classes of cases of contagious disease in which treatment in hospitals should be compulsory. It seems to me that there should be something approaching standardization in construction; a scheme upon which we can perhaps agree; and it ought to be possible for the State Department of Health, after it has decided the matter to its own satisfaction, to furnish certain tentative plans and drawings for contagious hospitals suitable for many communities; taking into special account economy and the necessity for having an institution which is elastic and susceptible of being increased in size with relatively small expense. Both of these considerations, of course, bring forth the question of the style of hospital to be chosen.

We have two general plans of construction. The older one, the one most extensively used in the past and at the present time, is that of the pavilion hospital. The pavilion plan, as you know, is used in the construction of general hospitals and is not limited to contagious disease hospitals, although it was perhaps designed in the first place with the idea of contagious diseases, or at least with the idea of separation of disease groups through distance.

During the recent war the pavilion hospital was the type of hospital constructed in most, if not all, of the large cantonments in this country. I do not doubt that by reason of this fact it will continue to enjoy popularity but I wish to call attention to the fact that this plan of hospital is rather an ancient one with but few improvements since Civil War times. It is of necessity an expensive form of construction involving duplication of porches, long pavilions and connecting passage ways with a large ground area. It is not only expensive from the standpoint of construction but from the necessity of employing a larger personnel. Within recent years there has been developed a plan of hospitalization for contagious diseases based on an entirely different thought.

The main factors of the new plan are dependent upon the following principles. The hospital should be operated upon the principle that completeness of separation of patients secured by interior arrange-

ments and perfection of technique, rather than distance of separation, will prevent cross-infection.

The pavilion plan should not be followed as a single building is more economical from the several points of construction, convenience, economy of administration and upkeep, as well as permitting a smaller personnel of nurses and attendants. Additional capacity can be supplied by enlarging the original building quite as well as by extending pavilions and where there is scarcity of land the enlargement may well be made by increasing the number of stories of the buildings. Height, within certain limits, will not decrease the effectiveness and efficiency of the plan.

The following general rules which assure elasticity should prevail. No room should be permanently set aside for a single class of cases. The contamination of a room during occupancy should be so small and the disinfection of the room and equipment following the discharge or death of a patient should be so perfect that any person may safely occupy the room immediately thereafter. Vacuum cleaning, steam sterilization, surface washing with soap and disinfectant solutions should supercede all other methods of disinfection. Fumigation should not be depended upon. The hospital building should be of substantial, practically fire-proof construction and should be provided with elevators and outside fire-towers for emergency use. A disinfection room with equipment, a laundry, kitchen, laboratory and an autopsy room should be provided. Most rooms should be designed for a single occupant or two occupants where there are uncomplicated cases of the same disease from the same household. These rooms should have interior lavatory and toilet-room equipment. Where ambulant cases are treated a larger toilet-room, accessible to patients without passing through the rooms of others, may be permitted.

One floor or a part of a floor should be reserved for use in times of epidemic, separable into complete cubicles by means or sheets. There should be no large wards. Adequate provision should be made for private cases where patients may be treated by their own physicians who must be required, of course, to comply strictly with all rules and regulations of the institution and who shall personally submit themselves to disinfection upon entering and leaving the hospital. This arrangement would be a source of revenue and an aid to maintenance and would serve to prevent the use of the objectionable term "alms house" hospital.

It should be realized that no hospital adequate for epidemics such as the influenza epidemic of 1918 can be provided for in any community and that under such circumstances temporary hospitals must be extemporized. In planning the contagious disease hospital, however, sufficient leeway for any but the most unusual visitations of disease should be provided. In this State Boards of Health are empowered by law to establish temporary hospitals which will supply the needs of other occasions adequately.

The law which was passed during the Legislature of 1917 is known as Act 160 (P. L. 1917). In this law there are some references indicating that this institution is provided as an institution for the poor or for paupers. It speaks of its location on the Poor Farm. I think these terms, "poor farm" and "poor houses" should be done away with and that we should speak of hospitals at the County Farms as the County Hospitals.

We should separate as much as possible from thought or reference to hospitals for contagious disease, the ideas of pauperism and dependency. In one section of this law it is provided that patients whether pauper or not may be removed from a private house or hotel or any place where isolation cannot be properly carried out and removed to such a county contagious hospital, if it exists. We are very glad to have this law even though it does imply a hospital for the indigent.

This year during the session of Legislature in Harrisburg, a law was passed enabling third class cities to combine with counties and jointly to construct hospitals for the treatment of general diseases or contagious diseases or both.

It is under this law that the proposed hospital at Harrisburg is to be erected. It is contemplated that such hospital for Harrisburg shall receive not only indigent patients, but pay patients and that physicians who will conform to required conditions shall be permitted to treat private patients in this hospital, as in their own homes, for remuneration. If section 7 of the 1917 law could be read into the 1919 law providing for joint county hospitals and city hospitals it would be very fortunate. We would then be definitely empowered with authority to remove the cases requiring isolation to contagious hospitals.

The question arises; Is such a hospital as the one described feasible or practicable in the ordinary community? While I was in charge of the San Lazaro Hospital in Manila we housed, isolated and cared for, under one roof and at the same time, cases of cholera, cholera carriers, plague, diphtheria, diphtheria carriers and all the scattering cases of serious acute communicable disease in the city of Manila with its population of 250,000 persons.

In adjacent buildings were housed 150 lepers, 200 or more insane persons and from 20 to 50 varicella cases, with occasional smallpox cases and a proportionate number of cases of measles. For reasons of convenience all tetanus cases were treated here and there were always some cases on hand.

During my administration and the administrations of my predecessors and successors, none of these diseases treated in the ancient pavilion wards were introduced by doctors, nurses, attendants or visitors into the modern building referred to, where an aseptic technique and the strictest discipline governed the administration. There were no cross-infections under this roof, albeit some of the nurses and attendants were native Filipinos, trained by American doctors. This seems to answer the question of feasibility.

I have had opportunity, within the last two months, to talk with the best authorities in this country, Army and Public Health Service officers and representatives of the Rockefeller Foundation who are doing extensive hospital buildings abroad and it seems to be the general opinion that this plan of hospitalizing contagious diseases is both sound and practicable. The question resolves itself into one of technique but I see no reason why a person capable of developing a surgical technique should not be able to develop aseptic hospital technique.

There are a thousand and one details relating to administration and equipment about which it is not desirable to talk at this time as I am dealing only with principles.

In passing I will simply mention a few of the details to be given consideration in establishing a technique; the use of caps and short sleeved gowns; provision for their frequent sterilizing in steam closets; masks for patients and immediate attendants in certain cases; swinging doors without knobs; foot-operated faucets; fine wire screening at all openings; arm basins; coco mats saturated with cresol solution for shoe disinfection at doors and entrances.

These are merely suggestions with reference to installations. The subject of discipline, organization and regulations cannot be taken up at all in this consideration of the contagious hospital.

I might mention the fact that glass partitions can be made use of, if the construction of the building is such that proper lighting is difficult. Movable partitions may also be used and these devices are used in certain hospitals but they are more expensive and less satisfactory than permanent partitions.

It seems to me that in the matter of the infectious respiratory diseases there has been too much stress placed recently upon the matter of indirect infection, as for example, by contaminated hand to mouth, and there has been evident a tendency to exaggerate the dangers of this possible infection route and to belittle the method of droplet convection.

Much misleading doctrine has been published in the past six months in this connection. Our investigation at Camp Meade, after the possibility of infection through indirect hand to mouth convection was suggested in connection with dish washing, showed definitely that there was no difference in the incidence of influenza among groups whose dishes and eating utensils were washed in bulk and sterilized in the process, and those who washed their dishes individually by dipping into cans which contained luke warm water.

Our investigation of the subject both statistically and experimentally resulted in our belief that influenza in the camps was not spread chiefly through crude dish washing methods. Most of us were convinced that not only in influenza but in the other well known infectious respiratory diseases it is the droplet which we have to fear. We can protect ourselves by wearing properly made masks, or better, by masking the patients. This does not bear directly upon our subject but I wish to make the point that the extension of respiratory infections can be guarded against in this way, particularly in hospitals.

I know of no reason why a contagious disease hospital following this plan cannot be as successfully carried out in this country as in a tropical country.

DISCUSSION.

Q.—Not long ago we were talking about putting up a municipal hospital for contagious diseases and proposed to put it on the grounds of our general hospital. That brought forth the statement that the law distinctly prohibits erecting a contagious hospital on general hospital grounds. Is there such a legal prohibition?

A.—The act of the recent legislature provided for the joint erection of county and city hospitals by arrangement and purchase of ground and it provided that these hospitals might be for general diseases or contagious diseases; or both. This could not be the case

if it were contrary to law to put contagious disease buildings on the grounds of general hospitals.

I consider it extremely unfortunate that we have such things as poor farms. I think wherever it is possible to locate contagious hospitals elsewhere than on poor farms it should be done. I think every effort should be made to eliminate the use of the term "poor house."

Q.—Why would it not be feasible to have hospitals which receive State assistance add a contagious hospital to their equipment? They could train nurses and take care of all patients, both poor and pay patients.

A.—I see no objection to that. It seems to me, that a community should place its hospital wherever it sees fit to place it. The law of 1917 only specified that such a hospital should not be placed within one hundred feet of a highway or in a densely populated part of a city.

Dr. HULL—A good many of us are familiar with the Philadelphia Hospital for Contagious Diseases. We know that a serious objection to that hospital is the large size of its wards, each providing for twenty-five or thirty beds. One of the serious troubles there in the past was that of cross infection. When we are constructing hospitals we should follow out the plan of small wards.

Quarantine in boarding houses and hospitals is usually unsatisfactory but in many instances we cannot arrange for anything else. It occurs to me that unless you have very ample grounds on your present hospital site, to place a new building there for contagious cases will at once affect the patronage of your general hospital; unless you have your contagious hospital building some distance away. I presume that the proposition is one of education of our people and doctors. It seems to me we cannot defer it.

A.—We must try to overcome groundless prejudice. Locating a contagious hospital building on the grounds of a general hospital might have the effect that you suggest but it seems to me that we should combat prejudice and strive at all times to promote the idea of hospitalization and the use of hospitals by private physicians, as well as by members of hospital staffs. We should aim for and work for this idea.

"THE EXANTHEMATA OF ACUTE CONTAGIOUS DISEASE."

With Lantern Pictures.

Dr. Jay N. Schamberg, Professor of Dermatology, Jefferson Medical College.

I am happy to see what a splendid organization has been brought about here. Everyone who knows Colonel Martin knows that he has never put his hand to anything that has not been a success, and he and those who have had charge of the development of this camp deserve the highest credit.

I am going to project upon the screen some photographs of eruptive fevers, and give some descriptive remarks of the slides as they are being shown.

Whenever smallpox is prevalent in a community the physician always has it in mind, and consequently patients are often sent to contagious disease hospitals suffering with other diseases such as chicken pox, syphilis, etc., which sometimes bear only a slight resemblance to smallpox; in the absence of it, one's mind does not center on it, and consequently we have patients sent into general wards and venereal wards.

I am going to show you a series of slides of smallpox cases. It is unnecessary in this place to speak of the general symptomatology of small pox, it is sufficient to say that the character of the initial stage is of great importance in diagnosing the disease. I do not think any man living can diagnose smallpox before the eruption appears. It can easily be mistaken for typhoid fever, influenza and other diseases. It is only when the eruption appears on the third day that the characteristic resemblance appears. In smallpox the eruption on the third day is just developing into vesicles; on the fifth or sixth day we have the lesions developing into pustules; on the eighth day the face becomes much swollen and the lesions become much larger; on the eighth or ninth day the eruption will reach its height and at this stage the patient will be completely prostrated.

Smallpox is one of the most interesting diseases to the nurse, and the patient is a revelation because of the constant changes. About the fourteenth day the pustules will rupture and the pus will dry on the skin and form a crust; soon the swelling will decline, as we see here, on the fourteenth day leaving this man who had not been vaccinated, with slight elevations instead of the depressions due to ulceration. On the fifteenth or sixteenth day the crusts are ready to drop off and after recovery there is left a slight amount of pitting which is not particularly disfiguring. The scarring in smallpox depends upon the extent and the depth of the eruption. In mild epidemics, the pus is more superficial and is not accompanied by as intensive prostration.

Here is a classic case of smallpox showing the relative proportion of lesions on the trunk. This is of great aid in distinguishing the disease from chicken pox where the eruption appears first on the face, and therefore dries up and disappears there first. About the eighth day the characteristic umbilication of smallpox occurs in the vesicles.

Here is a case of semi-confluent smallpox in the case of a negro. In a case of well developed smallpox a man may have forty thousand

lesions on the skin, containing approximately two quarts of pus. The wonder is not that some of the patients should die, but that any of them should recover. You are able to see the prominence with which these lesions stand out as if something were inserted under the skin. This distinguishes the eruption from chicken pox.

Here is a photograph of a physician who contracted smallpox after he had been seven times unsuccessfully vaccinated, and had failed to re-vaccinate himself again after a brief exposure to a mild case.

We often speak of cases of varioloid as something resembling smallpox. It is really smallpox rendered mild by previous vaccination. This man had been vaccinated in infancy. Varioloid runs a much more rapid course than smallpox, the lesions are less deep, transpire more rapidly and dry more quickly. These cases are more likely to walk about the streets, and are therefore more dangerous.

There are a few people in the world who are immune to smallpox and some people who are immune to vaccination. This girl was practically immune to smallpox and yet could give rise to a very violent case of smallpox in a person not vaccinated and susceptible.

Since 1896 there has been in the United States a mild type of smallpox developed from the severe type through a weakening of the germ. This type has spread over the entire country, and it has spread all the more rapidly because of its low mortality and because it did not inspire the fear among the negroes of the south that the more violently fatal form did. This form has been prevalent in Pennsylvania at different times with a very low rate of mortality, and along side of it the older form of smallpox with a mortality rate of about twenty-five per cent.

In this case the hands and feet are extensively involved and there is great pain. In a severe case, the patient will lie in bed with his hands above the covers in order to relieve the pain. In this case the pocks on the hands do not rupture, and will retain the infection of smallpox for a long time.

Extensive eruption of confluent lesions or vesicle pustules running into each other. Sometimes the skin will peel off.

A photograph of a woman with black smallpox. In a virulent epidemic when a patient develops this form of hemorrhagic smallpox it is almost always fatal. The diagnosis is not always easy because the early hemorrhages cause a repression of the true eruption of smallpox. This type is more common in pregnant women, men who are addicted to alcohol, and in old age. The patient's mind remains clear. This woman gave birth to a living child a short time before her death. The child was vaccinated just as soon as it was brought into the world, but on the ninth day of its life it developed smallpox and died because the vaccination could not be done early enough. These cases of infection in utero are known in medical literature.

A case of smallpox in a young child not vaccinated. No infant that is successfully vaccinated could contract smallpox.

This child, born of a mother convalescing from smallpox, had an eruption of smallpox in the pustule stage and was dead. There are cases of children having been born with scars of smallpox, having passed through the disease in their mothers' wombs.

In some cases of smallpox instead of pits there are elevated, papular, horny lesions. With a treatment of iodine these gradually disappear.

This boy had a severe case of smallpox and lost an eye, a great deal of hair and was severely pitted.

During the pustular stage of smallpox and along about the twelfth or fourteenth day the secondary infection of the skin takes place. It is possible to prevent this by the use of antiseptics on the skin in the early stages. We have tried out all the methods of preventing scarring that are known, and we find that no method would be successful in a severe case. The best application was iodine. It tends to restrain the secondary pus infection which in itself is partially the cause of the scarring.

This man lost an eye through smallpox. In severe cases the eyes may become infected through the lids, and they may develop corneal ulcers. Sometimes the cornea will melt away and the entire eye be destroyed. Fortunately, patients who lose both eyes usually die. A good many live with the sight of one eye destroyed.

Vaccination and smallpox may run along concomitantly. The incubation period of smallpox is about eleven days, so that if an individual has an infection of smallpox and you get an active vaccine inserted it can bring about its effect before the smallpox develops; if the vaccine is administered a little later it will modify the disease, but if it is not administered until a week after the patient has been infected, there will in all probability be no alleviating effect.

It is sometimes a difficult matter to distinguish between chicken pox and smallpox, particularly in adults. German text books tell us that there is rarely a case of chicken pox in adults, but this is not so in America where people do not contract it in childhood because the country is not so thickly populated. The adult with chicken pox will often have a little fever, chilliness and nausea before the chicken pox appears; therefore, it presents the symptomatology of smallpox, but you never see marked prostration and you never see vomiting which are such prominent symptoms in smallpox. Very often there is a little bluish discoloration of the vesicle, and the vesicle breaks down and looks hemorrhagic. It is well to remember that chicken pox in adults presents a suggestion of the initial stage of smallpox.

Another disease which may be confounded with smallpox is measles. The eruption in measles comes out about the fourth day, and in smallpox about the third day. The adult with measles usually has profound prostration, and the picture is often a difficult one to distinguish; but profound catarrhal conditions, sneezing, and congestion of the eyes will help one in making the diagnosis.

Eruption in a case of typhus fever. We have had cases sent in to our hospital supposedly suffering with hemorrhagic smallpox, but pronounced cerebral symptoms, sensitiveness to light, delirium, etc., usually differentiate the disease.

You see here a woman with a pustular eruption. There is perhaps no disease which is more often confounded with smallpox in the adult than syphilis. This has been known for many years, therefore the resemblance in names. Before syphilis was known, smallpox used to be called "pox;" when syphilis became known it was called "great pox," so the name smallpox was given in order to differentiate. Not infrequently we find in the venereal wards in our hospitals cases of smallpox, and vice versa; but generally the patient with smallpox will send for you, while the patient with syphilis will go to the clinic. There is not the same prostration. The pustular type of syphilis

is characterized by small papular syphilides on the face. This type of syphilis is particularly prevalent among negroes.

Here is a young man sent to the municipal hospital as a case of smallpox. He had a malignant type of syphilis.

Also a woman sent in as a case of smallpox. There is one point that is very valuable in differentiating these two diseases and that is the distribution of the eruption. You never seen an extensive case of smallpox in which the palms of the hands and the dorsal surfaces of the hands are not involved, but pustular syphilis never attacks the palms of the hands or the vermilion surface of the lips because there is no hair there.

This is a bromidia eruption in a child who was suspected of having smallpox. The bromides produce an eruption which may be pustular and leave a solid elevation which may cover the entire face. Sometimes these bromidia eruptions may occur in nursing infants whose mothers are taking bromides.

This photograph is particularly interesting because these two girls were exposed to smallpox—one had been vaccinated and developed a very mild form of smallpox; the other had never been vaccinated and developed a very serious case. The vaccinal immunity was beginning to wear off in the first case.

Three children who had been exposed to smallpox. Two of these children had been vaccinated, but the mother thought the third was too young to be vaccinated, and it was the only one to contract the disease.

It is never too early to vaccinate an infant. Of course, vaccination is an artificially imposed disease, and we do not ordinarily vaccinate an infant because it lowers its resisting power, unless the child has been exposed to smallpox. I am inclined to believe, however, that young children have less systemic reaction than do older people. This child was vaccinated at birth.

I have a group of photographs contrasting chicken pox and smallpox. In a mild form of smallpox the eruption is very scant. There is more on the face, arms, and hands than on the rest of the body. Chicken pox comes out in groups; this is not true in smallpox. The eruption in chicken pox comes out within forty-eight hours with the exception of those lesions on the face which are a little in advance; in smallpox the eruption comes out on the third day.

This multiformity of the eruption in chicken pox rather than the uniformity of eruption in smallpox, the distribution on the covered surfaces rather than the exposed, their tendency to break when touched, and the fact that they are not as deeply seated in the skin should distinguish chicken pox from smallpox.

We have here a photograph of measles with the usual blotchy eruptions. In adults we must always remember the possibility of confusing this disease with smallpox.

Small papular measles sometimes bear a resemblance to scarlet fever. German measles, which is the most common type of contagious disease, may be hard to distinguish from scarlet fever as the symptomatology is midway between measles and scarlet fever—it is a sort of intermediate between the two. Unfortunately for diagnosis there are several types of rubella—one that suggests scarlet fever, and another which is more papilliform. Scarlet fever varies in its virulency in different epidemics.

Nobody seems to know exactly what the strawberry tongue means. The tongue in scarlet fever is promptly heavily coated; in twenty-four to forty-eight hours the coating exfoliates—it peels off, leaving a red, beefy tongue studded with elevations which should be more important in the diagnosis than anything else.

(Series of slides showing desquamation of various parts of the body in scarlet fever).

Perspiration causes desquamation. This is not uncommon in children, and their exclusion from school is not justified because of this. In these cases the cutaneous eruptions are out of all proportion to the other symptoms. They may have a temperature of 101 degrees, perhaps, but relatively little prostration. Furthermore, it is possible to have the entire face involved; this is not the case in scarlet fever which never causes scaling of the face and eyelids.

Picture of a large suppurating gland in scarlet fever. Glandular fever was suggested as a name for scarlet fever. We are able to distinguish between an old enlarged gland because it feels like cartilage, while a new enlargement feels very soft.

Picture of vaccination. Nearly all persons are susceptible to vaccination just as most all persons are susceptible to smallpox. Where a vaccination fails to take, it may be due to the fact that the patient is unsusceptible or it may be due to the fact that the vaccine is not active enough to produce successful vaccination.

If the individual is vaccinated in infancy he may remain immune against successful vaccination throughout life; about the age of eight or ten, if he is vaccinated again he may be immune from smallpox for life. If the individual is vaccinated in infancy and again later in life, the form of vaccination will depend upon the amount of immunity which he still retains. If he has only a small degree of immunity left, he may only develop a light form of vaccination; if the immunity is completely worn out it may be a partially successful vaccination, but very often the re-vaccination is accompanied by a considerable degree of systemic reaction. If you vaccinate a school child and the vaccination is not successful, the instructions may be to keep on vaccinating until you get a reaction, and you may go on vaccinating each week and get no results. It is possible that when you first vaccinated you introduced the vaccine virus there and produced certain antibodies which will keep that child immune for some time, and you may not be able to get a successful vaccination.

Occasionally you will get, at the height of a vaccination, a roseola vaccinia. In some instances you may get what the English have called vaccinal eruption. This may lead to error in cases where the individual has been exposed to smallpox, but the eruption has not the distribution of smallpox.

I should like to utter one word of caution about the vaccination of children who have a moist eczema. The child with an extensive eczema should never be vaccinated unless it has been exposed to smallpox.

In conclusion, I should like to say a few words about the after treatment of vaccination. Nothing brings the name of vaccination into disrepute more than accidents and fatalities. The most serious

complication after vaccination is tetanus of which, unfortunately, in the aggregate a very considerable number of cases have developed in the United States after this condition. It develops more in certain states, where tetanus is more prevalent from other causes, but I fear that we as physicians have been rather delinquent in the past and have not regarded vaccination as a surgical procedure. We are inflicting a surgical wound on the skin and are at the same time inflicting a disease upon the patient.

Patients should be given instructions as to the care of the vaccination, and should be seen again after the vaccine is administered. Nearly all the cases of tetanus I have ever seen have been due, I believe in every instance, to secondary infection. I do not believe they have been due to the presence of the lockjaw bacillus in the vaccine. You can hardly blame a parent for becoming an opponent of vaccination who has been forced to have his child vaccinated in order to enter school, and then has that child contract lockjaw and die. The best treatment after vaccination is the painting of the area with a two per cent. solution of picric acid in a fifty per cent. solution of alcohol, applied twenty-four hours after vaccination. This will not interfere with a successful vaccination, and should be applied daily. You will be surprised to see how gratefully the children will hold out their arms to have them painted; it relieves the inflammation, does not interfere with the vaccination, and there is much less danger of subsequent infection.

SOME PHASES OF DISEASE CONTROL, WITH SPECIAL REFERENCE TO MALADIES RARE OR INFREQUENT IN PENNSYLVANIA.

By Lt. Col. Thomas W. Jackson, Assistant to the Commissioner of Health.

When we turn to the lexicon for a definition of Epidemiology as modernly understood in Public Health work, we meet with disappointment for there epidemiology is defined as "Medical science treating of epidemics."

Modern practice has necessitated the inclusion of epidemical and endemical diseases in the field of work of the epidemiologist who plies his investigations not only in the realm of disease occurring in epidemic waves but in the field of diseases which are constantly present to a greater or less degree in any place or locality and to sporadic diseases as well, which occur now and then.

Moreover the epidemiologist does not confine himself to investigations. He advises and sometimes directs the application of remedies for the community conditions which he discovers in the course of his investigations.

The well equipped epidemiologist must be something of the clinician, statistician, pathologist, bacteriologist, climatologist, lawyer, public health instructor, general hand-shaker and sympathetic citizen.

His life is one of vicissitudes and taken altogether it is not always a happy one. He accumulates some friends but rather more enemies and is often an object of suspicion. He can never count on popular or even professional approval of his work and he must account as his sole reward the realization of work painstakingly and conscientiously done. His mistakes follow him about like an ever-fattening Nemesis and from the similarity of the term epidemiologist he is constantly mistaken for a specialist on epididymitis or an authority on demonology.

Yet there is constant variety in the life of the epidemiologist. No two outbreaks of disease are identical in all respects. Ofttimes the qualities of a detective—(ability to analyze and synthesize)—are needful to establish the truth, while in other cases the facts need but to be assembled for one to deduce the obvious conclusion.

Where laboratory diagnosis is involved local laboratory facilities should be employed if they are at hand, supplemented by confirmations by the laboratory of the State Department of Health located in Philadelphia. It is hoped that a portable traveling laboratory will be available in the department before long, in which event the necessary investigations, bacteriologic or chemical, or even autopsy investigations, can be made immediately and upon the spot.

Laboratory aid is not always required, however. Often the answer to the problem is readily obtained by the application of simple common sense.

The public state of mind in communities excited by sensational newspaper stories is often such as to cause the omission of the application of the common-sense test until local fears are calmed by assur-

ances from the visiting investigator. This applies to the lay public and in somewhat less degree to the local medical public. The average practitioner sees the cases in his own clientele and knows little of those of his professional brethren, unless he chances to see them in consultation. A visiting investigator with the entrée to all households and the authority of the State behind him has a distinct advantage over the local practitioner.

The necessity for the epidemiologist to maintain his poise and a certain detachment from the purely local viewpoint, is of course, apparent, but the first quality called for is that of *diplomacy*. Needless antagonism to the local authorities is fatal to the best results and every consideration of courtesy demands that we shall approach our problems and all the concerned parties with fairness, open-mindedness and *without* undue preconception.

When it is apparent that the State laws have been violated or ignored deliberately an attitude of firmness is called for, but threats or swashbuckling methods are never in order and invariably defeat the objects of the Department, which are primarily corrective and not punitive.

Human nature is much the same everywhere, regardless of climate, race or nationality. I think I might, perhaps, entertain you for some time with accounts of a good many diplomatic contests in connection with public health endeavor which I have engaged in in different parts of the world, but if they have taught me anything it is this, that the natural attitude of the layman towards health officials varies little in the American, the Britisher, the Greek, the Spaniard, the Serbian, the Cuban, the Filipino or the Chinaman and that successful effort must be based, first of all, upon diplomacy and courtesy. If I have ever failed utterly to accomplish even a small part of a reasonable purpose I ascribe it to some omission in diplomacy, courtesy and firmness.

This does not mean that the measure of your success is the degree of satisfaction expressed with your work by the community or even the central office;—often these expressions are discouraging even when the work done has been conscientious in all respects.

Public approval is not our principal goal but an occasional and pleasant by-product.

It has been suggested that I “touch the high places” in some remarks concerning a few diseases which are uncommon, indeed practically unknown, in Pennsylvania but which are likely at any time to be imported into the State, especially by returning soldiers from the near Orient and Russia, and in the case of typhus fever by laborers from Mexico. These diseases are not of equal epidemiological importance.

First let us consider *Typhus Fever*. The synonyms found in text books are—spotted fever, jail fever, and ship fever. It is necessary to differentiate between typhus abdominalis or typhoid fever and typhus exanthematicus or typhus fever. An association of relapsing fever or recurrent fever with typhus exanthematicus has been noted in ancient accounts and we now understand why this association has been noted; the diseases do occur together and for the simple reason that both are borne and transmitted by the same insects, the clothing louse and probably the bed bug. Tentatively we may accept the organism of Plotz as the cause of typhus. However, laboratory diag-

nosis is not available as yet because this organism is difficult of cultivation, being an anaerobe, and we must depend for the present upon the history and symptomatology for diagnosis.

Typhus fever is a disease of sudden onset and of varying intensity of type; it is usually ushered in by a chill. There is almost immediately profound prostration and definite mental obscuration; there is early flushing and the exanthem appears about the fifth day. Following this eruption there is no marked relapse, as for example in the case of smallpox, and the fever continues uninterruptedly. The eruption is red in color and while described by some authors as papular, is in my observation, maculo-papular, the spots varying in size from a pinhead to a pea and but very slightly elevated.

In some cases the spots become petechial and there is also present a subcuticular marbling or mottling. The disease terminates by crisis. The duration is from 10 to 12, or even 14 days for the febrile period, the invasion stage, the eruptive stage, the state of excitation, the pre-critical stage, and the crisis stage; following this is the convalescent stage. The length of the periods are variable and it is doubtful whether there is a true desquamation. The distribution of the eruption is about as follows, in the order of its appearance: Flanks, shoulders, anterior axillary regions, and chest. It is uncommon on the neck and face. In Serbia one of the diseases which was much confounded with typhus fever was scarlet fever; evidently there are many people there who have never had scarlet fever and many cases of unrecognized scarlet fever were found in beds next to typhus fever patients. There is no great similarity except that in both diseases there is an eruption.

(Schematic representation of typhus fever (thermogram) shown on blackboard). First three days is period of invasion, temperature rising very abruptly and by the fourth day perhaps reaching 105° . At this time the eruption appears, mania and delirium are evident, and prostration is extreme. Weakness is very marked, the patient becomes trembling and sometimes dies. If patients die during the disease death usually occurs during the early part of the second week; if they do not die directly from typhus fever but from sequelae, complications or other intercurrent diseases, they may die any time within the period of a month. The crisis may come about the 10th or 12th day and is very sharp. The temperature may drop within thirty hours to subnormal when very decided stimulation is called for. Brill's disease is a very mild type of typhus fever.

In times of peace we rarely encounter the severe type of typhus fever that has occurred in Russia and Serbia in the last few years. Typhus fever exists in certain parts of Mexico most of the time and we do have the disease introduced over the Mexican border from time to time.

There is little in the pathology that is distinctive, at autopsy. If a case dies at the height of the disease there will be found splenic swelling and if in the acute advanced stage of the disease, a friable swollen spleen with enlargement of a moderate degree. Typhus fever is not an intestinal disease and there is nothing distinctive to be found in the gastrointestinal tract.

The mortality rate in typhus fever varies from 2 per cent. to 20 per cent. or 25 per cent. and the mortality in the Serbian epidemic probably averaged above 10 per cent. One hundred thousand people died from typhus in Serbia, which at a mortality rate of 10 per cent. means that 1,000,000 people had the disease.

Relapsing Fever.

The relapsing fever of Europe is caused by the Obermeier spirillum. There is a relapsing fever of Africa caused by a different spirillum, closely resembling it. In Europe the disease is conveyed by bedbugs and probably by lice and in Africa it is conveyed by the tick. It is a much milder disease than typhus.

The onset of relapsing fever is characterized by a chill and a very rapid rise in temperature to 104 to 105 degrees on the second day, early and decided prostration and very decided pain in various parts of the body, these pains being evidently muscular. The mind is perfectly clear, delirium hardly ever appearing. This clear-minded condition continues through the course of the fever and the patient in consequence suffers a great deal. There is no definite eruption in relapsing fever, but labial herpes are frequent as are the dry brown tongue and asthenia which go with high temperature. During this period and immediately following the initial chill there are marked prostration, pain, and splenic tenderness and the spirilla are present in the blood in greater or less numbers; they suddenly disappear with the crisis.

On the sixth or seventh day the crisis is reached; this consists of sweating, diarrhoea or vomiting, or both, and a sudden drop of temperature, sometimes to 96.5 degrees F. Following this there is a period of a week's freedom from symptoms and rapid restoration to strength. On the fourteenth day the patient will go through the initial experience which he had on the first day. There is this to be said about the second period, it is shorter, usually covering only about five days. After this second attack the patient may or may not have more paroxysms. Usually two paroxysms cover the disease, although the patient may have three or four.

There should not be any possibility of confusing typhus and relapsing fever; one is a disease which may be diagnosed in the laboratory, in the other laboratory diagnosis is not practical; they are very dissimilar although they occur in association during epidemic times.

Three great epidemic diseases have challenged Europe in the last quarter or half century, plague, cholera, and influenza. All of them have invaded the United States and are capable of doing so again.

Plague is less likely to be introduced in Pennsylvania and therefore calls for much less attention here; it is a rat-borne disease readily diagnosable in the laboratory and is of the utmost seriousness, calling for an extensive anti-rat and anti-flea campaign. Plague is caused by the plague bacillus; cholera by the cholera spirillum.

Cholera is not likely to gain headway in the United States. As a matter of fact cholera has been introduced here and we have gone through two or three epidemics of it, but this disease depends, as does typhoid fever in a large degree, on carriers and the cholera carrier automatically ceases to be a carrier after a few weeks. The typhoid carrier on the other hand is a permanent institution and continues to carry the germs for an indefinite period. This is probably the principal reason why cholera has not invaded the United States, but if it ever should come we know how to combat it, the measures being the same as those used in combating typhoid fever and dysentery.

Yellow Fever requires no discussion here as it is now absolutely controllable by anti-mosquito measures.

Dengue and *Papatacci Fever* are uncommon or unknown in Pennsylvania but both are borne by insects; dengue by the mosquito and papatacci fever by a phlebotomus fly. Having had both of these diseases I can testify that dengue is the more unpleasant of the two. These diseases are practically non-protective, so far as lasting immunity is concerned.

Grouped with these two diseases is *Trench Fever*, badly named and of two varieties.

A recent author has discussed trench fever, giving in a fairly satisfactory way the etiologic facts as recently determined in the military laboratories. His description of the clinical manifestations leaves something to be desired, however. He fails to make sufficiently clear to the inexpert reader the distinction between the febrile spirochaete infection known as Epidemic Jaundice, Well's Disease or infectious hemorrhagic jaundice, which prevailed in some of the European trenches, and that form of trench fever caused by a non-filterable virus conveyed from man to man by lice. Better clinical descriptions correlated with the positive diagnostics of the laboratory are needed for all of these ill-understood disease conditions, recently so important in the military camps of Europe and now especially momentous to the United States by reason of possible importability.

Neither variety of trench fever seems likely to be introduced to the United States and in their present obscure status as to causation they may be passed over without more extended remark.

Certain infections have played important roles in the morbidity of the armies engaged in the present European war. These diseases are dysentery, malaria, typhus fever and relapsing fever. I will not discuss any of these diseases further except in relation to their transmissibility and importation into the United States. Two of these infections may certainly be classed in the "reservoir" group of diseases. These two, malaria and relapsing fever, are definitely caused by parasitic organisms in the blood stream of man and are transmitted to others only, so far as we know, by insect vectors: certain anopheline mosquitoes in the case of malaria and bed bugs, ticks and lice in the case of relapsing fever.

The period of communicability for typhus fever by lice is apparently a brief one immediately associated with the acute or febrile stage of the disease. The duration of the infectivity of the louse fed upon the blood of an active case of typhus fever is quite a different matter, however, and in the present state of our knowledge we must look upon the infected louse rather than the cured or convalescent typhus patient as the menace to the United States and to Pennsylvania, so far as the importation of typhus is concerned, except from Mexico. The importance of this fact from the prevention standpoint is obvious and the indication to attack lice in the clothing and on the bodies of all European and Mexican immigrants is definite and plain.

Relapsing fever and malaria can be demonstrated only by expert microscopic examination of blood specimens and when detected these diseases should be subjected to the most thoroughgoing and prolonged treatment under conditions of absolute control; foreigners with these infections should be excluded from the country. The insect vectors

concerned in transmitting both of these disease infections are present in this country and are widely distributed, so that infected persons arriving here are sure to propagate their infections in others, sooner or later. Recent surveys of Southeastern Europe have disclosed a prevalence of malaria in its most dangerous and persistent forms (estivoautumnal infections), hitherto unsuspected and rivaling the most notorious tropical haunts of the disease.

In the case of dysentery the situation is somewhat different. As a matter of fact, the causative organisms of both amebic and bacillary dysentery abound in the United States and probably have always done so. Under favorable conditions these bacterial and protozoal organisms give rise, in the persons ingesting them, to their respective forms of dysentery. During and following the Philippine campaigns thousands of American soldiers were invalided to the United States suffering from dysentery, many of the cases being of extreme severity and virulence and ending in death. Some of these cases have never been cured although the sufferers survived. The interesting fact is that no appreciable increase in the incidence of dysentery in the United States has followed these importations.

It appears that we are justified in dealing with these cases upon purely economic grounds. Such cases in foreigners as present invalidism of severe type and which reasonably appear incurable, should be excluded on the grounds that the sufferers are likely to become public charges. With our returned soldiers it is a very different matter. Other cases among foreigners, giving promise of cure under treatment, can be dealt with accordingly, without special fear that they will give rise to epidemics in the United States.

In the same manner we must trust the Federal health services to deal with the various forms of intestinal parasitic infections, many of which are perfectly and readily curable. It does not seem necessary to further consider special disease infections. The principles upon which is founded our treatment of immigrants, as individuals or as classes, are well established and generally understood.

What will be the effect of the European war upon disease conditions in the United States?

Assuming that a course of wisdom will be followed with regard to post bellum immigration and the readmission and follow-up of our returning soldiers, there will probably be no serious increase in our morbidity or mortality rates, so long as we continue to be guided and controlled by a modern and rational conception of the causes of disease and the methods of importation.

DISCUSSION.

Q.—Will you state briefly upon what you would base the differential diagnosis of leprosy?

A.—Leprosy is a disease which may be definitely diagnosed in the laboratory; in fact that is the only kind of a diagnosis admissible. The time is too short to permit me to give you a description of the disease or to discuss its diagnosis but I may say that the outstanding signs of a case of tubercular leprosy are enlargement of the ear lobes, disappearance of the eyebrows, corrugation of the forehead and nodulation of the face, hands and various parts of the body.

If it is a case of anesthetic or mixed leprosy there will be areas of pale skin, anesthesia, perhaps the appearance of the distinctive claw-like hands with mutilations, ulcers of hands or feet and almost surely elevations of the skin with discolorations. Depending upon the amount of secondary infection there will be more or less ulceration and suppuration. Ulcerations of the septum are common and important from a diagnostic stand point as they yield lepra bacilli; nodules, anywhere, also yield the bacilli and afford diagnostic knowledge. These are the striking things, in a general way.

The presence of leprosy in Pennsylvania is a much disputed question. We have no way of knowing how many lepers are at large. I saw a leper in Pittsburgh recently, a baker who had passed through the hands of at least a dozen hospitals and clinics and who had taken at least a dozen injections of salvarsan. Leprosy had not been suspected until he came under the eyes of a man who had seen the disease in the Philippines; yet it was a very plain case with at least half a dozen striking lesions distinctive of leprosy.

I think it would probably be possible to round up 20 to 25 lepers in Pennsylvania. When you consider the fact that this man had a clear cut case of leprosy with a typical history and had been going the rounds of hospitals and clinics and had not even been under suspicion, it is not difficult to imagine that there are other unrecognized cases. We have a large foreign population, people who come from countries where leprosy is relatively common, and I think it would not be a rash wager to undertake to find twenty lepers in Pennsylvania, if given a reasonable length of time to make the search.

In spite of all the well known striking signs, the diagnosis must rest upon the recovery of the Hansen bacillus. This bacillus is commonly found on the ulcerated septum of the nose and in all well developed nodules. The leper that I saw in Pittsburgh had septal ulcers, lesions on the hands, body, back and arms. He had been under treatment for syphilis (without result) because he had a positive Wassermann reaction, which is not uncommonly present in lepers. The reaction is also present in Yaws, a disease seldom, if ever, seen in this country.

Q.—Is leprosy highly contagious?

A.—No; it is mildly contagious. It is practically incurable and leads to a horrible ending and death. In my opinion all lepers should be segregated. I think they should be humanely colonized and treated and detained so long as they are lepers, because, even though the disease is but mildly contagious it is a hopeless disease and a horrible one.

Our duty to the community should be more commanding than our sentimental concern for the unfortunate who has to be detained.

PARASITIC DISEASES IN RELATION TO MEDICINE AND SURGERY AND THE ERADICATION OF MOSQUITOES IN THE PROPHYLAXIS OF MALARIA.

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Parasitic diseases were known to the ancients and the discovery that pathogenic bacteria are the cause of important diseases in man is a generation old, but, our knowledge in regard to the nature of these affections may be said to be of recent years.

The groups of parasitic diseases commonly comprise affections due to forms of life higher than bacteria such as fungi, protozoa and metazoa of which Actinomyces, Malaria Parasite and Hook Worm, respectively, are examples; while bacterial diseases are those due to pathogenic bacteria such as Bacillus Tetanus and Bacillus Diphtheriae.

As to the nature of these two groups of diseases: Bacterial affections are, as a rule, acute diseases, sudden in onset; the period of incubation is commonly known; the course of the infection is short and ends either in death or complete recovery and not uncommonly confers immunity against another attack, as is the case with typhoid fever, and diphtheria.

Contrary to this, parasitic diseases are of slow onset; the period of incubation is commonly unknown; the course of the disease is of long duration and of uncertain termination; they commonly confer no immunity; a fatal termination is not uncommon and complete recovery is the exception. The gravity of parasitic diseases is not due to their virulence however, but to the fact that though mild affections, they, nevertheless, are potent predisposing factors to profound metabolic disturbances (malaria) or to secondary bacterial infections (hookworm disease, dysentery).

It may be seen that the natural differences of these two groups of affections are responsible for the relatively small attention paid in the past to parasitic diseases by the general practitioner and the laity in particular and, to a certain extent, by the Medical Schools, for it is only recently that parasitology has been taught in these institutions.

Taking a simple case of malarial fever, for instance, the disease is manifested by an attack of fever which commonly lasts only a few hours and although the attacks may reappear every two or three days, the patient, unfortunately, feels practically well during the intervals between attacks, and consequently pays little or no attention to his condition. Worse than this, even in neglected cases, the attacks become milder every time and finally after some weeks or months they disappear. The patient apparently feels well although his body is loaded

more and more with the malarial parasites which invariably give rise to profound metabolic disturbances in the internal organs, fibrosis of the spleen and the liver, anemia, heart disease, and the other lesions of chronic malaria and its complications which, as a rule, are incurable and of fatal termination.

The same is true of ankylostomiasis (hookworm disease) in which symptoms of the disease are commonly manifested after months or even years of the infestation, in the form of profound metabolic disturbances, anemia, gastro-intestinal derangement and ulceration of the duodenum which by predisposing to secondary bacterial infection, when not treated, invariably ends in the death of the patient. Dysentery, sleeping sickness, filariasis, paragonimiasis, schistosomiasis likewise predispose more or less to similar conditions. It may be seen, therefor, that parasitic diseases give slight warning, of the infestation until too late and this emphasizes the importance of an early diagnosis of these diseases.

Contrary to this, bacterial diseases, as a rule, are acute affections; they give, in other words, a timely warning, commonly last a few days or weeks, the mortality is relatively low and complete recovery is the rule.

But beside the very nature of parasitic diseases and their interesting etiological and biological importance, another factor, the clinical, deserves special consideration as it intimately touches the medical profession and the practitioner in general, and the welfare of the patient and the health of the community in particular.

It is to me most pleasant to have the opportunity of bringing before this selected audience, the consideration of these important facts. Let us select a few of the most important parasitic diseases such as those due to protozoa—malaria, dysentery and syphilis; those due to cestodes—dibothriocephalus and hydatid diseases; those due to trematodes—paragonimiasis and schistosomiasis, and those due to nematodes—trichiniasis, filariasis and ankylostomiasis.

We will attempt a brief outline of the parasites, their life history, the symptoms of the diseases they produce, the resemblance of these symptoms to those of other non-parasitic diseases and, more particularly, the simplicity of the laboratory diagnosis.

MALARIA.

Malaria is an acute, sub-acute or chronic disease manifested by recurrent attacks of fever. It is caused by the malaria parasite, a protozoa belonging to the sporozoa. Three types are recognized namely: The tertian, sub-tertian and quartan. The parasite requires an intermediate host, a mosquito of the genus anopheles, for its complete evolution and man contracts the disease through the bite of an infected mosquito.

Symptomatology:—In the acute stage malaria resembles other acute infectious diseases except that commonly the attack is of short duration, the fever lasting only a few hours, followed by a period of quiescence which may be of one, two or three days. The clinical diagnosis of this stage, therefore, offers no difficulty. In the sub-acute and the chronic form, however, it has no characteristic clinical symptoms as those manifested in the form of gastro-intestinal disturbances, hepatic derangements, enlargement of the spleen, anemia and other metabolic disturbances are common to non-malarial affections also.

Laboratory Diagnosis:—The laboratory diagnosis of malaria is made without difficulty by examining a stained blood preparation in which the parasite appears inside of the erythrocyte as a stained and pigmented body.

DYSENTERY.

Amebic dysentery is a sub-acute or chronic affection of the large intestine characterized by tenesmus, diarrhea and bloody stools due to ulceration of the colon. It is caused by *endameba histolytica*, a protozoa belonging to the rhizopoda. Vegetative and encysted forms are found, the latter being concerned with the transmission of the affection. The cyst is discharged with the feces and, by being swallowed with polluted water or contaminated food, on reaching the intestines develops into the vegetative form and the cycle is repeated.

Symptomatology:—No special symptoms may be said to exist in the early stage of dysentery. Later in the disease, tenesmus, mucous and bloody stools are characteristic, but, these symptoms may be atypical or absent when the ascending and transverse portion of the colon instead of the rectum, is the site of the lesion. In this form the symptoms are those of colic, diarrhea, and other enteric disturbances which may be confounded with appendicitis. After months or years, gastro-intestinal disturbances, jaundice, and finally abscess of the liver, especially in the tropics, may occur.

Laboratory Diagnosis:—Although amebic dysentery may easily be mistaken for other affections of the colon, the laboratory diagnosis is made without great difficulty, as it consists of the making of a fresh cover glass preparation of the feces, as fresh as possible (preferably while still warm) and selecting a mucous and bloody portion of the stool for examination. The parasite is easily recognized either in the vegetative (ameboid) or encysted form, but must be differentiated from certain harmless amebas.

SYPHILIS.

Syphilis is an affection characterized by acute (chancre), sub-acute (secondary symptom) and chronic or tertiary lesions caused by *treponema pallidum*, a protozoa belonging to the flagellates. Very little is known with certainty in regard to the life history of *treponema pallidum* except that like gonorrhea, it is transmitted by contact.

Symptomatology:—It is not the purpose to discuss the symptoms of syphilitic affections, but merely to emphasize the fact that the very polymorphic nature of the lesions in the different stages of the disease, from the primary chancre to the secondary eruption and from this to the affections of the internal organs and finally to the lesions in the central nerve system, all render the clinical diagnosis more or less uncertain as the symptoms, like the lesions, may resemble a great variety of non-syphilitic affections.

Laboratory Diagnosis:—The value of the complement fixation test in the diagnosis of syphilis is so well known at present, that no comment is needed. The Wassermann reaction, unlike the laboratory diagnosis of tuberculosis, malaria, dysentery, etc., is not concerned with the finding of the organism in the material to be examined, but with the detection of certain biochemical products in the blood of syphilitic persons, and it serves consequently, not only as an indis-

pensable aid in the diagnosis of syphilis but in the differentiation of this disease from other non-syphilitic affections with which it easily may be confounded.

DIBOTHRIOCEPHALIASIS.

Dibothriocephaliasis is a chronic affection caused by the presence of *dibothriocephalus latus*, the fish tapeworm (cestode) in the small intestine and characterized by gastro-intestinal and metabolic disturbances and anemia more or less pernicious in type. For its complete development the parasite requires an intermediate host, a fish (salmon) in the body of which the development of the larval or infective stage takes place. Man is infected by eating improperly cooked fish containing these larvae (pleuro-cercoid) which may easily be seen by the naked eye in the muscle or eggs of the fish.

Symptomatology:—There are no characteristic symptoms in dibothriocephaliasis upon which a clinical diagnosis can be made with certainty and not uncommonly symptoms are altogether absent. A certain degree of anemia, gastro-intestinal and hepatic disturbances are commonly present. The passage of segments of the adult parasite with the feces renders the diagnosis easy but this, not uncommonly, is overlooked.

Laboratory Diagnosis:—The laboratory diagnosis is made without difficulty by finding the eggs of the parasite, which commonly are abundant, in the feces. Segments of the parasite may also be detected in the excrement. A certain degree of anemia or an increase in the percentage of eosinophiles is invariably present.

HYDATID CYST.

Hydatid disease is a parasitic cystic affection of the liver, lung, spleen or ovaries, characterized by the presence of cysts containing numerous scolices or hydatides; hence the name of the disease. The disease is caused by the development of the larvae of *tenia echinococcus* in the organ affected. The adult parasite lives in the intestines of dogs, wolves, etc., where the eggs are discharged and passed with the feces. Man is infected by swallowing these eggs with polluted water, contaminated food or directly by bringing them to the mouth with unclean fingers.

Symptomatology:—There is not a reliable symptom upon which the surgeon can base, with certainty, the clinical diagnosis of hydatid cyst. A certain degree of cachexia is commonly present often accompanied with attacks of urticaria. The growth of the cyst is commonly slow, it is fairly well encapsulated and more apt to occur in the liver. Not uncommonly the surgeon resorts to an exploratory incision for the diagnosis.

Laboratory Diagnosis:—There is no reliable means for making the laboratory diagnosis, during life, of hydatid cyst except the finding of the hooks of the scolices in the liquid aspirated from the cyst but this operation is no longer recommended. The complement fixation test, using the liquid of the cyst as antigen, has proved unsatisfactory. The presence of a tumor accompanied by a certain degree of anemia, cachexia and an increase in the eosinophiles, in the absence of other metazoal infestation, is suggestive of hydatid disease.

PARAGONOMIASIS.

Paragonomiasis, also called Oriental Hemoptysis, is a chronic affection of the lungs resembling chronic tuberculosis and is caused by the lodgment of *paragonimus westermanii*, commonly known as the lung-fluke, in the bronchi. The life history of the parasite is imperfectly known.

Symptomatology:—Clinically this disease resembles chronic tuberculosis of the lung; with persistent cough, bronchopneumonic areas of consolidation, hemoptysis and cavitation in the advanced stage of the disease. Paragonomiasis, therefore, cannot be differentiated from chronic tuberculosis of the lung except by the laboratory diagnosis.

Laboratory Diagnosis:—The laboratory diagnosis of paragonomiasis is made without difficulty as the eggs of the parasite are invariably present in the sputum of the patient in fair number. The disease can no longer be said to be extremely rare on this continent, as cases have been reported among the Japanese emigrants in the Western States and the north of Mexico. Cases, therefore, which clinically resemble tuberculosis, but, in which tubercle bacilli are not found in the sputum, should be examined for the eggs of *Paragonimus Westermanii*.

SCHISTOSOMIASIS.

Schistosomiasis is a chronic ulcerative affection of the rectum or bladder characterized by periodical attacks of dysentery or hematuria, as the case may be, caused by the lodgment of the eggs of the parasites in the submucosa of these organs. The parasite is a termatode and three different species are recognized as the cause of the diseases, namely: *Schistosoma Hematobium* which affects the bladder and *S. Mansoni* and *S. Japonica* which affect the rectum.

Symptomatology:—The affection may last for months and perhaps years without giving rise to any appreciable symptoms. In the advanced stage, when ulceration takes place, periodical attacks of dysentery or hematuria, as the cause may be, are invariably present; gastro-intestinal disturbances, cachexia and anemia are common but all these symptoms are not pathognomonic as they are common to other non-parasitic affections of these organs. The diagnosis is easily made by the examination of the feces or urine.

Laboratory Diagnosis:—The laboratory diagnosis offers no difficulty as the eggs are easily found in the feces (*Schistosoma Mansoni* *S. Japonicum*) or in the urine (*S. Hematobium*).

TRICHINIASIS.

Trichiniasis is a disease characterized in the acute stage by marked gastro-intestinal symptoms and in the chronic stage by chronic myositis resembling muscular rheumatism. It is caused by a parasite nematode, *trichinella spiralis*, the larval stage of which is found in the muscle of the hog and other animals. Infection in man commonly takes place by eating improperly cooked meat such as sausage or smoked ham containing the larvae of the parasite.

Symptomatology:—The symptoms of the acute stage of trichiniasis, which correspond to the first week after infestation, resemble those of ordinary acute gastro-enteritis, from which it can hardly be differentiated; and those of the chronic stage show no characteristic

features upon which a certain diagnosis can be made. One important epidemiological feature is this; if more than one person ate the same meat they should show symptoms of trichiniasis.

Laboratory Diagnosis:—The encysted larvae of the trichinella are easily detected in the infected meat commonly known as “measley” pork. When possible, the remaining ham or sausage and likewise the meat procured from the patient by emetics or by the use of the stomach pump, should be examined at once for the presence of trichinella larvae. In chronic trichiniasis the larvae may be found in a small piece of flesh removed from the extensor muscles of the leg as near the tendon as possible.

FILARIASIS.

Filariasis is a chronic disease characterized in the early stage of the affection by periodical attacks of lymphangitis and in the chronic stage by hyperplasia of the skin and subcutaneous tissues commonly known as elephantiasis. The disease is caused by a nematode, *filaria bancrofti*, the larval stage of which is found in a mosquito of the genus *Culex* which acts as an intermediate host of the parasite. Man is infected by the bite of the mosquito containing the larvae of the worm.

Symptomatology:—Filariasis may have been present for years or even through life, without giving rise to any appreciable symptom. Periodical attacks of acute lymphangitis of the legs are not uncommon. Interference with the return of the lymph from the lower extremities, due to the mechanical obstruction of the lymphatics in the pelvis or groins where the adult parasite is found, gradually gives rise to swelling of the legs, and hyperplasia of the skin which in time forms a peculiar morbid condition of the extremities called elephantiasis. Such condition, however, may also be caused by non-parasitic affections such as tumors of the pelvis, chronic adenitis, etc.

Laboratory Diagnosis:—This consists of finding the embryos or microfilaria in a fresh cover glass preparation made with a drop of blood collected from the finger. Preferably the examination should be made at night when the microfilaria are more abundant in this peripheral blood. We have found the following technique to be very efficient: collect 5 or 10 drops of blood from the finger in 5 or 10 cc. of a 10% acetic acid solution; after complete hemolysis centrifugalize the mixture and examine the sediment for the presence of microfilaria which are found at all times, day or night, regardless of the hour at which the blood is examined.

ANKYLOSTOMIASIS.

Ankylostomiasis is a chronic affection characterized by ulceration and hemorrhage from the bowels, anemia, gastro-intestinal disturbances and other symptoms caused by the presence of the hookworm, a nematode, in the duodenum. The larvae of the parasite are found free in the soil, especially in mines, and man is infected by the penetration of the skin, or by the larvae being carried to the mouth by unclean fingers, contaminated food, etc.

Symptomatology:—There is no characteristic symptom upon which a clinical diagnosis of ankylostomiasis can be made. A certain degree of anemia, more or less pernicious in type, edema of the face and

extremities and gastro-intestinal disturbances are common, but similar symptoms may be met in other affections of the intestine. Besides, infected persons, commonly known as carriers, not uncommonly show no symptoms. As a rule the diagnosis of ankylostomiasis is based on the finding of the eggs of the parasite in the feces of the patient.

Laboratory Diagnosis:—This offers no difficulty whatever as it merely consists of the finding of the eggs of the parasite in fresh cover glass preparations made from the feces of the patient. The eggs, as a rule, are found in sufficient number.

The above brief outline concerning the nature, symptoms and diagnosis of parasitic diseases shows:

- 1.—That parasitic diseases in general present no characteristic symptoms upon which a clinical diagnosis can be made with certainty. Thus, schistosomiasis can easily be confounded with dysentery, and paragonomiasis of the lung cannot be differentiated from chronic tuberculosis. Moreover parasitic diseases may show no appreciable symptoms.
- 2.—Parasitic diseases though mild in character are potent predisposing factors to profound metabolic disturbances and secondary bacterial infections. Thus the ulceration of the intestine in dysentery, schistosomiasis and ankylostomiasis, opens the intestinal mucosa to the entrance of pathogenic bacteria and the same is true of the formation of abscesses in the lung in paragonomiasis.
- 3.—As these grave secondary complications in parasitic diseases are, as a rule, late in the course of the affection, an early diagnosis is imperative. To that end it is essential that the general practitioner, physician and surgeon, shall be familiar with the etiology and nature of these most important groups of diseases of man.
- 4.—Although a clinical diagnosis of parasitic diseases is commonly uncertain or impossible, the fact should not be overlooked that in most instances a simple laboratory examination will determine the true nature of the affection.

The *eradication of mosquitoes in prophylaxis of malaria* will receive only very brief consideration.

Since the discovery that a certain kind of mosquito (anopheles) is the transmitter of malaria in man, efforts have been made to eradicate this insect from malarial districts. The best means for this purpose is petroleum sprayed in the proportion of about 1 cc. per square yard surface of water, where these insects breed. This procedure is as simple as it is effective since the mosquitos, larvae and pupae die in 5 to 10 minutes after coming in contact with the oil on the surface of the water.

The spectacular death of mosquitos by the action of petroleum has naturally led to a general conception that its use would eventually result in what is called "the eradication of mosquitoes." A moment's thought, however, shows that this is impracticable, if by *eradication* is understood the complete elimination of these insects from a place where they normally breed.

The use of petroleum undoubtedly is the most valuable aid in the destruction of mosquitos when it is sprayed regularly every week on

all stagnant waters, slow flowing streams, etc., during the breeding season of the insect, but, too much stress should not be laid on this point, else we are apt to neglect more important factors such as the isolation of the malaria carriers, the treatment of infected persons, quinine prophylaxis, screening of the house and wells, in the prophylaxis of malaria.

In my experience in the campaign against malaria in Brioni, an island in the Adriatic Sea, by following these prophylactic regulations, it was possible in 1902, after a work of three summers, to eradicate malaria from the island but not mosquitoes. The same is true of Cuba where yellow fever may be said no longer to exist although the mosquito which transmits the disease (*Stegomyia Calopus*) still breeds in the island.

This clearly shows that since the destruction of mosquitos is merely one among the many prophylactic measures against malaria, the success of the hygienist will largely depend not so much in concentrating his attention on the eradication of mosquitos, an impossibility. as in eradicating malaria in man; a very practicable problem.

LABORATORY PROCEEDINGS.

**LABORATORY DIAGNOSTIC METHODS—Dr John L. Laird, Chief
Division of Laboratories.**

**LABORATORY THERAPEUTIC METHODS—Dr. John L. Laird,
Chief of Division of Laboratories.**

**METHODS OF PREPARING AND FORWARDING SPECIMENS—
Dr. John L. Laird, Chief of Division of Laboratories.**

**REPORT OF STOOL SURVEY AT MONT ALTO—Lt. Col. Thomas
W. Jackson, Assistant to the Commissioner of Health.**



LABORATORY DIAGNOSIS METHODS.

Dr. John L. Laird, Chief, Division of Laboratories.

We shall consider first the Wassermann Reaction, the diagnostic method for determining syphilis, as being representative of all complement fixation tests which may be also used for gonorrhea, tuberculosis, leprosy and other bacterial infections having a general systemic influence. If you will bear with me for a while, I shall go into some little detail as to the technique of the Wassermann Reaction in order that you may understand the fundamental principles which are the basis for a complement fixation test.

The basic theory is one of immunity with the production, either naturally or artificially, of an immune body; and to determine the existence of the same. If a foreign body gains access to an animal body there is formed in that animal and present in its serum an antibody which has the power to combine with and render inert the particular foreign body causing its production. This foreign body shall hereafter be known as antigen, a substance having power to generate an antibody. If this antigen is a formed element, such as animal cells or bacterial bodies, the antibody formed is of Ehrlich's third group, known as amboceptors which have the power of combining with and rendering inert their specific antigens only with the help of a third substance known as complement, as the term signifies, a substance which has the power to complete a reaction between an amboceptor and its specific antigen.

In illustration, if we inject into rabbits the red blood corpuscles of the sheep we produce in those rabbits and cause to be present in their serum an amboceptor which has the power in the presence of the complement to combine with and destroy or hemolyze these corpuscles. If the *treponema pallidum*, the causative agent of syphilis, gains access to the human body there is formed in that human body and present in the serum an amboceptor which should have the power in the presence of the complement of combining with and destroying the *treponema pallidum*.

An attempt to produce, in vitro, these two described reactions successively with one re-agent common and necessary to both, constitutes the Wassermann Reaction. For instance, if we place in a test tube the specific antigen, the serum of a patient suffering from syphilis, that is, one containing a syphilitic amboceptor and the complement and place this tube in an incubator at body temperature, we will have a reaction taking place between the syphilitic amboceptor, the specific antigen and the complement with a combination of these three substances resulting in an inert chemical compound.

If we now place in this tube the serum of rabbits immunized to sheep cells, that is the hemolytic amboceptor and a suspension of sheep corpuscles and place it in the incubator the second time at body temperature, a second reaction cannot take place inasmuch as the reagent common and necessary to both, the complement, has already been used up in the first reaction. We therefore have in this tube, the hemolytic amboceptor and the sheep's blood remaining inert, the one in solution, the other in suspension, with no destruction of the sheep cells or no hemolysis; or a positive reaction to syphilis.

If on the other hand we again take the specific antigen and the serum of the patient not suffering from syphilis, that is one not containing syphilitic amboceptor and the complement and place them in a tube in an incubator at body temperature we can have no reaction taking place in such combination inasmuch as the serum contains no syphilitic amboceptor with which such reaction could be brought about. We therefore have the complement remaining free in solution so that if we add the hemolytic amboceptor and the suspension of sheep's blood we will get a combination, on the second incubation, of the last three re-agents; the complement, hemolytic amboceptor, and sheep's blood resulting in the destruction of sheep cells or hemolysis or a negative reaction to syphilis.

This is understood by a glance at the accompanying semigraphic diagram:

1st Incubation 37.50 C			2nd Incubation		
Syphilitic	Patient's	Complement	Hemolytic	Sheep's	No Hemolysis
Antigen	Serum		Amboceptor	Blood	or
	(Syphilitic				a Positive
	Amboceptor)				Reaction to
					Syphilis.
1st Incubation 37.50 C.			2nd Incubation		
Syphilitic	Patient's	Complement	Hemolytic	Sheep's	Hemolysis
Antigen	Serum		Amboceptor	Blood	or a
	No Syphilitic				Negative
	Amboceptor				Reaction
					to Syphilis.

I shall have to take up, but shall do so as briefly as possible, a description of the various re-agents represented in this test, in order that we may understand not only the qualitative reactions but its proper quantitative application.

The Wassermann Reaction is essentially a quantitative chemical reaction and therefore capable of quantitative accuracy. In any quantitative chemical reaction, it is necessary to have a known unit on which the value of the re-agents and results may be based. This known unit in the Wassermann Reaction is a known suspension of sheep's red blood corpuscles. The value of every other reagent in the test is referable either directly or indirectly to this unit. The unit of sheep cells used in the laboratory is one billion corpuscles to the cubic centimeter. The unit of hemolytic amboceptor is that amount of rabbit serum in the presence of sufficient complement which is just capable of destroying the unit of sheep cells in $1\frac{1}{2}$ to 2 hours incubation at body temperature and is the amount to be used in the test.

The unit of complement is that amount of fresh guineapig serum which in the presence of one unit of hemolytic amboceptor is just capable of destroying a unit of sheep cells in $1\frac{1}{2}$ to 2 hours incubation at body temperature and is the amount to be used in the test.

The unit of antigen is not determined. We use an excess of antigen or that amount of antigen which will show the most positive reaction in every case of syphilis and an absolutely negative reaction in every nonsyphilitic case.

The patient's serum or the unknown unit which is to be determined is used in the quantity of 1-10 of a cubic centimeter inactivated or heated to between 50 and 55 degrees centigrade for $\frac{1}{2}$ hour in order to destroy any possible complement content.

This technique varies from the original Wassermann technique which is being used even at the present time in a great many laboratories, in the use of actual amounts of complement and amboceptor in quantities represented by one unit. The original reaction calls for two units of these reagents which means that syphilitic serum can possess sufficient amboceptor to fix an entire unit of complement and still give a negative result, because having two units there is still sufficient complement left to completely destroy the sheep cells which act as an indicator in the test.

This difference is further borne out by statistics on the results of the reactions obtained by these methods in comparison to the method where the "single unit system" is used. In secondary syphilis, by the older method, the average of 96 per cent. of positive Wassermann's was obtained. The patient under the old form of treatment with mercury and iodides showed a negative change from the positive in an average of from four to eight months, whereas with the single-unit system the Wassermann is positive in 100 per cent. of the cases in the fourth week of the chancre and remains positive in the average case under treatment by mercury and iodides for three years. This as you can see is of some importance in diagnosis and thereapeusis.

I should like to mention here a little more detail concerning antigens and the part they play in the present confusion in the diagnostic field. The proper antigen for use is the alcoholic extract of the syphilitic foetal liver. Antigens are being used, made from alcoholic extracts of normal organs and any tissues containing lipoids. These latter antigens acting against the peculiar type of immunity on which the Wassermann is based are useful and accurate to a degree. If, however, an antigen has been titrated properly against known cases of syphilis and nonsyphilis it will be found that the antigen of the highest degree of accuracy will be that made from syphilitic foetal liver.

I should like to mention here an antigen in common use: viz., Cholesterinized antigen, which is not only of less use than the syphilitic antigen but is distinctly dangerous, especially with the single unit system technique in which such antigen will give from 10 to 20 per cent. positive reactions in cases which were never infected with syphilis. The time is too short to go into detailed explanation but there are reasons for this as there are for everything in chemistry.

The quantitative Wassermann if properly performed has a valuable and practical application to clinical medicine in prognosis and therapeusis, if done by determining the amount of complement which any serum is capable of fixing and not as usually done by varying the amounts of the patient's serum or antigen against a fixed amount of complement.

I must handle this subject from a practical rather than from a theoretic standpoint in order that you may in the short time allotted be given that which is practical. Where it is necessary for the physician to know exactly how much benefit the patient is deriving from the treatment, a request for this quantitative Wassermann will be honored in the laboratory. Inasmuch as this work is complicated and takes considerable time and material, it would be impossible to do such a test on every case coming to the laboratory but where these

factors which I mention play a part such request should be made on the second examination of a specimen having shown a strongly positive reaction on the first test.

The theory, technique and interpretation of reports on the Wassermann Reaction with slight modification are applicable to other complement fixation tests: viz, gonococcus, tuberculosis and other bacterial complement fixation reactions.

There is insufficient time to more than mention a few of the other laboratory methods of diagnosis: fortunately, however, a detailed description of them is of little practical importance to you as County Medical Inspectors and nurses.

The diagnosis of pulmonary tuberculosis is made on microscopic examination of the sputum—best stained on individual slides by Gabbett's method. Negative sputa which have other characteristics suggestive of tuberculosis are digested for examination before final report is made. It is important that repeated examinations be made before a negative finding is used as a means of elimination of the diagnosis of tuberculosis; at least five specimens should be sent at weekly intervals.

Tuberculosis of the kidney is diagnosed in the laboratory on the examination of a twenty-four hour specimen of urine, collected preferably directly after catheterization of the ureters—which should be performed in every case for clinical diagnosis. The sediment from the twenty-four specimen is examined microscopically and inoculated into guinea-pigs on which latter procedure the definite diagnosis is based. Such diagnosis may be obtained in a period of ten days by using the Bloch method of inoculation into the inguinal region of the pig, and subsequent examination of the inguinal glands of the pig for the presence of tubercle bacillus.

Spirachaetal diseases are diagnosed by examination of excretions likely to contain the organisms by either dark field microscope, for fresh preparations, or the Fontana silver nitrate staining for fixed smears.

Blood parasites, such as malaria, are found by microscopic examination of blood smears properly stained, Wright's stain being the most applicable.

Stool specimens for parasites and bacterial infections are handled by simple microscopic examinations and differential bacterial cultures and agglutination methods respectively.

Typhoid diagnosis is based on the Widal reaction, an agglutina-tive reactive power possessed by sera of typhoid patients against the typhoid bacillus, or by blood culture and cultural detection of the typhoid bacillus from the blood of the patient.

Diphtheria is diagnosed on microscopic finding of the diphtheria bacillus from cultures taken from the nose and throat of the suspected patient and in cases where clinical symptoms are lacking, further corroborated by inoculation of guinea-pigs to test the virulence.

The laboratory methods of diagnosis applied to milk and water, as to their potability, will be covered in a practical demonstration, at another hour.

LABORATORY THERAPEUTIC METHODS.

Dr. John L. Laird, Chief, Division of Laboratories.

Three laboratory methods, as applied to therapeutics, are important to bring before you during this period.

The Quantitative Wassermann Reaction or better, the Quantitative Syphilitic Complement Fixation Test, has a distinct practical clinical application as a guide to treatment of syphilis, if properly performed; the quantitative value of the test being based on the actual amount of complement in units any serum is capable of fixing. This method gives the direct unit amount of syphilitic amboceptor contained in the tested serum which, inasmuch as the immune body in syphilis, as shown by the test, is not of a combative nature, is a direct index to the amount, virulence and activity of the infection.

Treatment, as it is adequate or otherwise in the individual case in destroying the infection, causes variations in the quantitative test which offer a very accurate index to the proper amount and frequency of administration of such treatment.

The other two laboratory methods to be discussed are of a direct therapeutic nature; and are brought before you at this time in some anticipation of their being put into actual practice. They are of special Autogenous Vaccine treatment for Pulmonary Tuberculosis and Gonorrhea.

We hope very shortly to have laboratory facilities for producing the first of these but it will, no doubt, be some time before we may hope to extend the work to the treatment of the second condition. The laboratory work entailed by these methods, however, will compel us to institute even the former in a modest way. It is our intention, therefore, to conduct our original research in the Autogenous Vaccine Therapy in Pulmonary Tuberculosis in the Sanatorium at Hamburg, the Dispensary at Philadelphia and the wards at Blockley Hospital.

Tuberculosis of the lung as we know it clinically is not a disease caused by the tubercle bacillus alone, nor, I might add, in majority. Very probably, each one of you, seated before me, has tuberculosis, a focus of tubercle bacilli in your lung but not pulmonary tuberculosis as we know it clinically. What is the distinction? The tubercle bacillus is a saprophytic organism, a parasitic organism, with which nature, with her normal powers, can and does deal very easily if it happens to land in tissue such as the lung. The processes of nature bringing about the walling-off of any foreign body in the soft tissues are much more rapid than the growth of the tubercle bacillus; and where these powers are normal, this is exactly the process which takes place. If the subject's "general resistance" is below normal, however, in other words if other pathogenic organisms are allowed to propagate in this lung and cause thereby a proper symbiosis with the deposited tubercle bacilli, such walling-off process does not take place and the tubercle bacilli are allowed to propagate and spread and cause the peculiar type of destruction known as clinical pulmonary tuberculosis.

The special Autogenous Vaccines aim to raise the resistance of the patient toward the symbiotic organisms and to kill them off, so, that nature can deal singly with the tubercle bacillus. Allow me to state here, that the procedure is not altogether a new one—it has been

attempted before without success; the failures we believe due to the method of preparation of the vaccine and not to the fallacy of the theory.

Two factors are of the utmost importance in the preparation of an efficient autogenous mixed vaccine. First, shortness of time in which the organisms are allowed to grow on artificial medium and, second, the preparation of the vaccine from the various organisms in their natural quantitative proportions. Both of these may be very easily obtained by taking the original culture on a medium upon which all the organisms present are known to grow and allowing them to grow naturally and together—making one set of subcultures in order to produce enough growth from which vaccines may be made and to remove any sputum elements which would be present in the original culture. In this way a vaccine is made from the sputum in forty-eight hours, and the various bacterial elements are in their natural proportion.

As you have no doubt surmised from what has been said, the clinician, to obtain an autogenous vaccine of this type need only send the specimen of sputum with a request for this product. Certain factors are of importance, however, in the preparation and forwarding of this specimen, which are of value in a specimen of sputum sent to the laboratory for any purpose, but, particularly so in this instance. The container is a sterile bottle, having no antiseptic (and to which, of course, none should be added) and should be handled in as aseptic a manner as possible during the collection of the specimen. The specimen must be sputum, coughed up from the lung, and should be sent to the laboratory as soon after collection and as rapidly as possible.

This sputum is cultured in the laboratory on Löffler's blood serum and on pure beef agar for a day and subsequent subcultures made in Löffler's medium and beef agar and grown for twenty-four hours. Sterile salt solution is now added in certain quantity, the bacteria freed from the medium, the suspension shaken for a short time to render it homogeneous and the bacteria killed by heating in a water bath of 60 degrees centigrade for one hour. The autogenous vaccine thus prepared in the laboratory contains in suspension ten billion organisms to the cubic centimeter from which concentrated suspension dilutions for injection are to be made according to the table on the accompanying instruction record sheet.

Our clinical experience with vaccines made in this way is limited enough to preclude the formation of definite clinical conclusions and keeps this undertaking for the present in the research field; it has been sufficient, however, to prove the added efficiency of vaccines prepared in this way over those of the usual preparation and to make the further research well worth while.

Autogenous Vaccines for Gonorrhea are prepared in a similar manner to those for pulmonary tuberculosis.

The vaccines consist of all the organisms in the prostatic secretion except the gonococcus. Gonorrhea is essentially a disease of the anterior urethra and the gonococcus cannot exist in the deeper tissues alone; symbiosis again plays an important role here. The vaccines are probably not at all curative of anterior gonorrhea, but are prophylactic against posterior gonorrhea and other gonorrheal complications involving the deeper structures.

Facsimile of Blank.

Form 323

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF HEALTH
LABORATORIES.

Instruction and Record for
ADMINISTRATION OF CONCENTRATED AUTOGENOUS VACCINE.

Lab. No. _____ Date _____
Name of Patient _____ Dr. _____
Address _____
Disease _____

The concentrated autogenous vaccine contains _____ billion organisms to one cubic centimeter. It should be diluted with Sterile Normal Salt Solution and administered hypodermically according to the table given below. The preparation and administration of each dose must be aseptically performed. The dose of each injection is one cubic centimeter.

TABLE OF DILUTION AND RECORD.
(Dose I O C)

No.	Vaccine.	Solution Normal Salt Solution.	Date of Injection. Interval—Four or Five Days.	Clinical Notes.
1	1 drops	100 drops		
2	1 "	75 "		
3	1 "	50 "		
4	1 "	40 "		
5	2 "	60 "		
6	2 "	40 "		
7	3 "	50 "		
8	4 "	40 "		
9	5 "	40 "		
10	6 "	40 "		
11	7 "	40 "		
12	8 "	35 "		
13	10 "	30 "		
14	15 "	35 "		
15	15 "	30 "		
16	15 "	25 "		
17	15 "	20 "		
18	15 "	15 "		
19	15 "	10 "		
20	20 "	10 "		
21	25 "	10 "		
22	25 "	8 "		
23	25 "	5 "		
24	30 "	5 "		
25	1 C C	0 "		

Result _____

Date _____

Dr. _____

Return this Record and outfit to the Laboratory on completion of treatment.

DIRECTIONS.

Shake vaccine bottle well before use, drop sterile normal salt solution with a sterile dropper or pipette into a sterile receptacle according to the amounts given in the table for each injection and add the requisite number of drops of concentrated vaccine; draw or pour the properly diluted suspension into a sterile hypodermic syringe; render the site of injection sterile by the application of alcohol or iodine; inject one cubic centimeter under the skin, preferably that of the upper arm.

Marked local or general reaction following any injection, as severe reddening and soreness about the point of inoculation, or marked malaise, fever and headache, indicate an overdose of the vaccine and should determine the administration of the same dilution at the next injection instead of the increased concentration called for in the table.

Keep the vaccine in a cool place if possible and handle with care to prevent contamination. Contamination will be evidenced by its assumption of offensive odor. Contaminated vaccines must not be used, but must be returned immediately to the Laboratory with a request for resterilization.

Renewal of vaccines: Send to the Laboratory the properly filled out history and request card as for the original vaccine and for the pulmonary vaccine, a fresh specimen of sputum.

NOTE: Always return to the Laboratory the Record of the case and the outfit on requisition for renewal of vaccines and on completion of the treatment of any case.

The clinical undertaking in the preparation of vaccines is slightly different from that of the tuberculosis vaccine in that the clinician must make the original culture. This is done in the following manner. After flushing his own urethra by voiding urine, the patient is instructed to assume the position for prostatic massage, closing the external meatus by pressure between the forefinger and the thumb: the prostate is gently but firmly massaged until the patient is sensible of the flow of prostatic secretion as indicated by a desire to empty the bladder.

During this process the physician will have prepared a dropper or preferably a small pipette by sterilization: with this instrument, instructing the patient to gradually relieve the pressure at the meatus, a small quantity of prostatic secretion appearing at the meatus is collected and placed, with all the aseptic precautions necessary in bacteriological work, on the culture media supplied in tubes for this purpose—drawing the pipette up across the surface of the media very gently, and replacing the cotton plug, the inserted end of which shall not, during this operation, have touched any object outside of the tube.

These cultures should be then sent to the laboratory as rapidly as possible and from them concentrated autogenous vaccines are prepared and are to be injected in the manner already described, under those for tuberculosis.

Clinically we have had considerably experience with these vaccines and have found them most efficacious. As already intimated they probably have little if any curative effect upon acute anterior gonorrhea—they do, however, prevent posterior gonorrhea and are cura-

tive of the chronic form of posterior gonorrhea and its complications. Considering gonorrhea as a whole, its aptness to become posterior and to lead to serious complications and the comparative simplicity and lack of seriousness of a purely anterior gonorrhea, a preventive measure for the posterior involvement might almost be held as a curative measure for gonorrhea.

Discussion by Medical Inspectors and Nurses.

THE METHOD OF PREPARING AND FORWARDING OF SPECIMENS.

Dr. John L. Laird, Chief, Division of Laboratories.

Of the subjects which it is my duty and pleasure to bring before you, there is not one of more practical importance to the production of accurate and dependable laboratory work than this, the preparation and sending to the laboratory of specimens for examination and diagnosis. And its importance to you physicians and nurses is directly proportionate to the value of the laboratory diagnosis to clinical problems.

We shall take up first the commonest but, by no means the least important specimen which you collect and send to the laboratory, namely; sputum:

Reports from the laboratory on these specimens have in the past often been inaccurate and, as in everything in life, there is a reason. Part of the fault has been, no doubt, in the laboratory, in too much haste in examinations, especially of apparently negative specimens and in faults of technique, et cetera, but a goodly portion of fault lies in the preparation and forwarding of the specimens which it falls to your lot to correct.

There have been received in the laboratory specimens of supposed sputum for examination for tuberculosis of the lungs and many times a series of such specimens will contain fully fifty per cent. of material other than sputum, viz: saliva, carbolic acid, nasal mucus and tap water. You can easily imagine that in many instances it is futile to attempt to find the tubercle bacillus, to diagnose tuberculosis of the lung on such specimens. How can we correct this fault?

First, by eliminating the solution of carbolic acid which it was our custom to place in the container. This also eliminates to a great extent the danger of the patient putting water in the container, for the patient need not and should no longer be instructed to wash out this container. The containers are now sent out without carbolic acid, consisting simply of a well stoppered sterile bottle into which is to be placed sputum or material raised directly from the lung on coughing, and nothing else.

Allow me to insert here a general rule governing nearly all specimens to be sent to the laboratory. No specimen, with the exception of tissues for pathologic section and examination, should be treated with any antiseptic or other preparation. We desire at the laboratory the specimen for examination in as near its natural and uncontaminated state as possible. In reference to the sputum this is of importance for other reasons which I shall discuss with you at a later period.

Second, no specimen of sputum should be sent to the laboratory directly by the patient without having been seen and diagnosed as such by the physician. By this means poor specimens, such as saliva, nasal mucus or contaminated and insufficient specimens may be corrected before forwarding to the laboratory. Beside which the physician having previous knowledge of the character of the specimen may now accurately and properly interpret the report which he receives on such specimen.

Inasmuch as the sputum container is used also for the forwarding of such specimens as feces, urine, pus and pathologic fluids, allow me to touch briefly on these subjects. The general rule on handling of specimens holds good with these materials as with sputum. Do not add to the specimens antiseptics or other material. This is of course of especial importance where cultural methods of examination are desired.

Another and final consideration in the forwarding of specimens of sputum, as applies to other specimens which will be taken up in their turn, is to use every means to send such specimen from the patient to the laboratory in the shortest possible time. This is best done by first class mail, special delivery.

The taking of blood for the *Wassermann Reaction* and other complement fixation tests and the *Widal*. The difficulty which we have experienced in transporting specimens of blood for these purposes to the laboratory must be well known to you by the number of changes which have lately been made in the outfits.

The first outfit which I shall consider for taking blood for the Wassermann Reaction, containing a small tube and needle, was faulty in that the tube was of too small calibre to properly allow the clotting of human blood and the subsequent separation of the serum in the laboratory.

The next outfit, containing a large tube for the collection of blood and a smaller tube for the collection of the serum, was faulty in that the first tube is too large in calibre for the proper clotting and separation and the separation of the serum from its clot, leading to poorer results in the complement fixation test than if the serum were allowed to remain with its clot. Serum thus separated becomes anti-complementary much more rapidly than in its original state. The needles contained in these two outfits are again useless features of such outfits. The blood, if taken by a needle should be taken through a hollow needle from the vein; if taken by puncture the puncture should not be made by a needle at all.

As a consequence the new outfits which we are going to send out as rapidly as they can be assembled contain simply a vial of proper calibre, viz: 8 to 10m.m., properly corked and no other feature with the exception of the mailing case containing, instead of the identification slip, the history sheet which shall accompany the specimen.

The importance of as rapidly as possible obtaining this feature (the history accompanying the specimen) in all specimens sent to the laboratory cannot be overestimated. The history sheet should accompany the specimen and remain with the specimen until the work is completed in the laboratory, in contrast to sending specimens with identification slips and having them matched up with separate history sheets by clerks in the laboratory. Occasionally this latter method may lead to confusion of the specimens, especially in

Wassermann work where with each series reaching the laboratory there are from 100 to 200 separate specimens for diagnosis.

The taking of blood for the Wassermann Reaction in the proper manner has been a most difficult matter to bring to the conviction of the average physician. I want to be put on record as saying that the blood should not be taken from the vein and for which I shall give sufficient reason. The blood should be taken by puncture of the finger in the following manner. With a sharp thin bladed scalpel puncture the lateral aspect on the pulp of the middle finger of the left hand in a spot on a level with the matrix of the nail and which shall further be designated on slight pressure on the pulp of the finger by the appearance of an area, triangular in shape, of a distinctly deeper red color than the surrounding skin. A puncture made in this manner and in this place will produce in any patient sufficient and more than sufficient blood. It has been the contention of physicians that sufficient blood cannot be obtained in this way. This is not so if it is properly done.

(Demonstration of method properly performed).

Another small point of some importance in the taking of this blood is the way it is actually collected in the tube; never touch the tube to the finger; allow the blood to flow and drip from the end of the finger, touching the mouth of the tube simply to the drop; touching the tube itself to the finger increases coagulation and brings about a more rapid healing of the puncture.

I shall now give you my reasons why blood taken this way is better both for the test and for transportation,—which factor we must deal with,—than blood from the vein. Blood taken in this way is arterial blood, in other words fully oxygenated. Blood taken from the vein is naturally venous blood and if I may put it in this particular light, being bad blood, not oxygenated, is more than half spoiled before it starts from the dispensary on its trip to the laboratory. Blood taken from the finger as described, enters the collecting tube drop by drop, each drop coagulating and throwing out its quota of serum so that as a consequence when the specimen is completed it consists of a hard firm clot with a large amount of clear and easily separated serum.

Such specimens in a large proportion of cases can be separated by simply pouring the serum off of the clot without centrifugating; in contrast to this, blood taken from the vein rushes, in total quantity, into the collecting tube and must clot as a whole; as a consequence we have a large soft clot containing part of the serum which is difficult to separate and containing a number of free corpuscles. A large proportion of these specimens to be prepared for the Wassermann Reaction, must be centrifuged and that in an electrical centrifuge running 1,800 revolutions per minute.

I want you to realize what this little point means to the laboratory worker. I mentioned a little while ago that a series contained from 100 to 200 tests, this means placing each of the specimens taken by the venous method in a centrifuge and allowing them to run sufficient time to get clear serum before the actual work on the Wassermann test can be started. This means a serious waste of time if nothing more. The Wassermann specimens should be sent to the laboratory by first class mail, special delivery.

The blood for the other complement fixation tests and the Widal should be taken in a similar manner and, shortly, new outfits for the Widal similar to those for the Wassermann will be sent out to you.

In taking smears for the diagnosis of gonorrhea there are only one or two points of importance. The most important of these is to take the smear from fresh pus with an applicator or sterile platinum loop and not with a cotton swab. It is of great importance where an open discharge occurs not to make a direct smear from this discharge.

Discharges of this nature, of a few hours or days existence contain pus cells, if any, considerably disintegrated and, as you all know, the diagnosis of gonorrhea is made on the finding of intracellular diplococci; if the cells are disintegrated we can find no such organisms. In such cases the old pus should be thoroughly washed away and fresh pus secured by pressure and the smear made from this; not with the cotton swab, for the reason that the cotton absorbs all the pus with the gonococci and the smear on the glass slide will consist mostly of mucus.

There is a special outfit, Outfit No. 6, for taking these smears which can be obtained from the Division of Supplies in Harrisburg. The outfits for taking cultures from the throat and other infected areas will be described in a later lecture under their division headings, as shall likewise be described the method of taking and sending such specimens.

This also holds good in the case of outfits for the purpose of taking water samples for analysis.

REPORT OF A STOOL SURVEY.

Conducted by Thomas W. Jackson, M. D., Assistant to the Commissioner, among the patients at Mont Alto Sanatorium during the period of the Instruction Camp (June and July, 1919).

The number of specimens examined, each from a single patient, was 105.

The examinations were *100 per cent. negative in result* for parasites.

Of the 105 patients, approximately 43 per cent. were children; 19 per cent. anemic cases; 38 per cent. unselected adult cases.

Method of Examination: One smear, under glass cover slip, was examined from each stool specimen submitted. In certain instances two or three smears from the same specimen were inspected. Examination was made under both the 2-3 objective and the 1-5 objective.

No ova, amoebae, flagellates or ciliates were encountered. A few of the stools were diarrhoeal in character but none were mucopurulent and the general character of the stools, particularly in case of the children, indicated fair digestion and a suitable diet.

Although this result is rather surprising, it is gratifying to know that these patients are so free from intestinal parasites. As the total number of patients included in the survey approximates one-seventh of the entire number at the sanatorium, it should provide a fair index of the situation.

In view of the negative results in the 105 examinations made it was deemed unnecessary to continue the survey.

It would be interesting to have comparative figures from the other two sanatoria at Hamburg and Cresson.

MILK, DAIRIES AND FOOD VALUES—SYMPOSIUM.

MILK AND DAIRIES—Hon. Frederik Rasmussen, Secretary Pennsylvania Department of Agriculture.

NUTRITIONAL VALUE OF MILK AND WHAT TO TEACH THE PUBLIC REGARDING FOOD VALUES—(Discussion)—Prof. E. V. McCollum, School of Hygiene and Public Health, Johns Hopkins University.

MUNICIPAL MILK CONTROL—Prof. George B. Taylor, U. S. Department of Agriculture, Washington, D. C.

PASTEURIZATION OF MILK—(Discussion)—Ivan C. Weld, Washington, D. C.



MILK AND DAIRIES.

Frederik Rasmussen, Secretary, Pennsylvania Department of Agriculture.

The question of milk is a much greater question than most people appreciate. There are two great aspects—one is the economic aspect, and the other is the health aspect. There are four distinct agencies that are interested in these two aspects. One is the farmer—the man who produces the milk, the man who takes care of the cows and does all the necessary work to get this wonderful milk; then we have the milk distributor; then we have the consumer, with another point of view of the milk question; and then we have the health officials who stand between the producer, the distributor, and the consumer. In many cases they become the umpires of the milk question.

Colonel Martin says, "Pennsylvania is the greatest State in the Union." The more I study of Pennsylvania not only from the standpoint of agriculture, its beautiful scenery, and its great industries, the more I am convinced that there cannot be a greater State in the Union than Pennsylvania. Pennsylvania's agriculture is not appreciated by many people, not even by the farmer himself.

When we take the statistics of Pennsylvania's agriculture, we find that the total value of the farms and equipment of the farms is over a million and a quarter dollars; that we have invested six hundred and thirty million dollars in land; that the buildings on the farms are valued at four hundred and thirty million dollars; the live stock at four hundred and one million dollars; implements at seven million dollars; the total value of labor at two hundred and fifty million dollars, out of which the farmer hires about fifty million dollars; the rest is done by the farmer and his family.

This wonderful agriculture is made up of various distinct types of agriculture out of which the dairy business stands supreme in this State. When we take the farms of the State we find that 88 per cent. of these farms have cattle on them, and out of this percentage, 87.2 per cent. have dairy cattle which shows that the agricultural interests are primarily dairy interests.

When we look at the map and take the entire northern belt of the State we find that if it were not for the dairy cow we would have no agriculture that would be profitable in that part of the country. They don't raise wheat and grain, but they have pasturage for cows. Then take the section from Philadelphia up to Easton, Reading, and Harrisburg and that is primarily a dairy section not because the people cannot raise other products but because of the increase in the value of the land. The dairy cow throughout the world goes with high priced land. So I want you to see that the dairy industry of Pennsylvania is absolutely a fundamental industry to the agriculture of the State, and to the welfare of those 220,000 families that live on the land.

The dairy is the most economic producer of human food of all our live stock. If you take one hundred pounds of digestible material

in the form of fodder or grain and feed it to a dairy cow, you get eighteen pounds of food solids; if you do the same with a pig, you get 15.2 pounds of edible solids; if you feed it to a steer and produce meat, you get 2.8 pounds; if you feed it to a sheep, you get 2.6 pounds, plus the wool. So that the dairy cow is more than five times as economical a converter of the raw materials on the farm into a human food product—a human food product that is indispensable to the human race—than any other animal on the farm.

When we look upon the milk question in Pennsylvania, we have some very interesting facts during the last few years. In 1910 there was the first milk strike in this country in New England. The farmers had received a price for milk at which they could not make a profit. They were changing constantly, selling off the cows, and letting the farms go down into hay. Some of them wanted to save the industry from absolute ruin. They would bring the milk home from the markets in order to force the milk distributors to pay sufficient prices for the farmer to make a living.

The same thing occurred in New York and Chicago. In Chicago they had a milk strike organized on the same basis as a labor strike. You can be assured of this, that the farmers of this country would never be organized in the way in which they were except when there were absolute economic reasons back of it to make it necessary to do so. The farmer does not naturally coöperate—he is an individualist—but in these cases these things happened, and we believe they were necessary at the time because the milk business had gone into the hands of very large milk distributing concerns who knew nothing of the cost of producing milk on the farm. They wanted to get the milk as cheaply as possible believing that when the price of milk was raised the consumption would drop off. Because the farmers were not organized, it was always much easier to keep the prices down on the farm.

The cost of producing milk on the farm has been made a study, and those who study this problem are trying to work out a basis upon which we may estimate the cost of producing milk so that the farmer may be able to get a price that will make it possible for him to make a living on the farm. When this study was first made it was all figured out in dollars and cents. There were no real fundamentals. Now it is figured out in the terms of the factors that go into the cost of producing milk. In other words we find out how many pounds of grain, how many pounds of hay, how many pounds of fodder it takes to produce a hundred pounds of milk, how many hours of labor is expended on this milk and then, even though prices change constantly, we can very easily find out how much it costs to produce milk. The costs must be applied locally.

We have had no milk strikes in Pennsylvania. There was one threatened in Philadelphia, but it was averted by the appointment of the Tri-State Milk Committee to study the question and an adjustment was made that was satisfactory to everybody. I think one of the most remarkable things we have had in the prices of milk in large cities was in Philadelphia where the price was raised from eight to fourteen cents within a comparatively short time without a decrease in the consumption of milk. It was simply accomplished by a propaganda of education which was carried on in the schools, by women's clubs, and organizations that were interested.

When the whole thing was put on the table, the people were satisfied that the farmer should have a price consistent with the cost of production and that the consumer would have to pay that price in order to maintain the industry.

Besides the actual factors in the cost of producing milk there some times enter other factors into the cost of production of milk—the indirect factors. By that I mean regulations that may be established that may increase the cost of production. We have had regulations in this country for a number of years, but it is only during the last few years that it has been developed into a definite system. The first regulation was to prevent water in the milk, the second specifying milk standards. In the early days when such standards were established, serious mistakes were made. In New England they made one grave mistake. They said milk must contain 3.7 per cent. fat, and 13 per cent. solids. They arrived at this standard by taking the average. The most interesting thing was this that they said that that standard should hold for the six winter months, and then when it came to the last of April milk to be a standard quality should contain 3 per cent. of fat and 12 per cent. of solids, so that one day milk that contained 3.25 per cent. of fat was legal and the next day it was outlawed.

Now that, of course, is past history but it simply shows that there have been serious mistakes made. The result of such a standard was that Holstein and Ayrshire cows could not produce milk that was up to the standard, and the farmers could not produce a normal milk. We have also what we call bacterial standards relative to milk. We believe absolutely that bacteriology applied to milk is fundamental. That is the only way in which we can get a line on the quality of the milk. It is not always a good thing, however, to make arbitrary standards for the purpose of prosecution on that basis. The milk supply of any territory or any city must be one that meets the particular requirements of that section.

In other words, we cannot take this whole country and make a set of rules that we can put into execution in every territory because the local conditions vary so much and because of the fact that we must take into consideration the economic problems in relation to the industry at that particular time.

We have had bacteriological standards that deal with the number of bacteria alone. Then we came to the viewpoint that number alone was not a complete indication but we had to have the kind. In other words, a few bacteria of a pathogenic nature would be far more harmful than a great number that were harmless.

All I wanted to do was to open this whole question of milk, and to give you a brief aspect of the economic side of the milk question. I am not going into details of the prices the farmer gets, how he should prepare his milk, and what the quality should be because we have men here to-day who have made studies of the important phases of the work. What I want you to see is that the milk problem is a great economic problem in the agriculture of the State, and that if we are to get any solution that will be satisfactory to the consumer and the producer it must be reached by taking into consideration all these factors that enter into it.

DISCUSSION.

Q.—In the city of Wilkes-Barre there is an ordinance that requires the examination of all milk to see if it comes from tuberculous cows. Is that possible without interfering with the supply of milk?

A.—It is possible, but impractical. The most interesting experiment of this sort was in the city of Milwaukee, but they had to revoke it within a comparatively short time. We have struggled with the question of tuberculosis for many years, and we have a lot of it all over the country, but it cannot be cleared up in a short time. The only possible way to clear it up is by the accredited herds which we are now establishing. At the present time, we have only five or six of them in the State but will have one hundred in the next year. We are trying to find out if the disease can be eliminated. I think it is a great mistake for the cities to pass an ordinance requiring the examination of milk for tuberculous cows.

Q.—Does the Department of Agriculture test cows for tuberculosis?

A.—Since 1892 the State of Pennsylvania has used the tuberculin test. Under Dr. Pierson, the State Veterinarian, they have spent hundreds of thousands of dollars in the eradication of tuberculosis where they have paid a farmer a certain amount of money for killing and disposing of diseased cows, under State supervision. What we do now is to let a man subject his herd to the supervision of the State Veterinarian and the Department of Agriculture, and we will test these cattle under regulations prescribed. In such a case we pay a man a definite amount of money, depending upon the value of that animal, when she reacts positively to the tuberculin test, and the Federal Department pays a certain amount more so that a man can get one hundred and twenty-five dollars for an animal. On the other hand, if you are a farmer and you think a cow has tuberculosis and you want to dispose of her that will be up to you. Unless you are ready to give us complete supervision of the place we will not pay you for that cow. We will help you with that cow and make the tuberculin test, but if she is killed, the farmer can collect no money from the State.

Q.—Do you get a positive reaction in cows just as in persons? Is it not possible to have healed lesions in cattle just as in human beings? A.—Yes, but some day those lesions will break down and she will become a spreader.

Q.—Could not milk be produced more economically if milk dealers would organize in a sort of trust?

A.—There are people who believe that. There are in New Jersey over one thousand cows under one management. They are producing certified milk. These large establishments do not fit in with our type of agriculture. Ours is a family proposition, and we have to have a system of mixed farming. We can never put in these large establishments and work it out on an economic basis. We might establish a few, but they would handle but a small percentage of all the milk that is produced. The cost becomes very high when produced under those conditions because it requires more expensive equipment to handle it. From an economic point of view it does not look practical.

Q.—May I ask whether it is the attitude of the Department of Agriculture that no restrictive measures shall originate in your department in regard to the distribution of milk from tuberculous cattle?

A.—Except pasteurization. If we should remove, at the present time, all the tuberculous cattle out of this country you would have decreased our milk supply to a degree where you would have the price of milk go up, you would cause a great economic loss to our agriculture, and not do the public such a lot of good because you can produce the same results by pasteurization.

Q.—How about the accredited herd system?

A.—In the first place, you would make application to us for getting on our accredited herd list. We would send a man to your place who would apply the prescribed test to your herd. If your premises were insanitary, if you did not have light and ventilation in your place he would tell you that these things are as necessary to animals as to human beings. Then we would test the cattle and those that would react we would kill, under State supervision, and you would get your indemnity. If you want to buy new cattle they must be brought under the tuberculin test. Then they are put in quarantine for six months and tested again before being introduced into your herd. The man who buys the cattle must keep them under quarantine on his own farm in a separate barn, however.

Q.—I would like to ask if the Department of Agriculture is going to formulate a set maximum bacterial content, especially in regard to colon bacilli. In the Health Department we are always getting inquiries about milk, and the question of colon bacilli comes up quite often, and I want to know if your department is going to specify certain requirements and what pasteurized milk should consist of?

A.—We are not. I believe that it is the duty of the Health Department. As far as certified milk is concerned, there is a medical milk commission which prescribes all the regulations concerning it. We accept conclusions of the Medical Milk Commission without question.

Colonel MARTIN.—Professor Rasmussen explains that there are no laws in the statute books, no State laws regarding the production of milk because conditions vary so much that it is impossible to lay down fixed regulations. I do not think any one feels quite prepared to formulate those laws. The people who are going to formulate those laws are *you*, and *you*, and *you* by having your health authorities in boroughs, towns, and cities pass, with medical advice, those sound practicable regulations that fit your individual locality. The milk question is being brought to you here to-day so that you may go home and make application in accordance with the general principles. We are not here to talk. We are here to get something to take home with us, and make it work in that place for the good of the people. When you say that of the Health Department you mean every one in the department all over the State, and that is *you*.

NUTRITIONAL VALUE OF MILK AND WHAT TO TEACH THE PUBLIC REGARDING FOOD VALUES.

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One of the outstanding results of modern research in nutrition is the great differences in the biological values of the proteins from different sources. In a general way this fact is appreciated by nearly all teachers of to-day, but many are still in need of clearer distinctions regarding what data in the literature is capable of direct application to practical nutrition, and what is of such a nature that it cannot be so applied.

No lack of appreciation of the data of the latter type is intended, for it may have, and frequently has, a value of the first importance to the investigator in this field. As an example may be cited the laborious studies through which the amino-acids became known, and the data yielded by such methods of analysis of the proteins as those of Fischer and Van Slyke.

Important as these results are in making possible further progress, they are not of such a nature that they apply, as they have been frequently applied, to deductions concerning comparative food values. It is through these results that we have arrived at a valid working hypothesis concerning the nature of the proteins, and have been able to appreciate why the proteins are not all of equal value. It is, however, but a fraction of the total number of the amino-acids of proteins that can be determined by these methods in a manner approximating a quantitative way. An attempt to utilize the figures for the yields of this or that amino-acid by this or that protein as evidence of the comparative values of the proteins themselves, or the food-stuffs from which they are derived, will lead to entirely fallacious deductions.

Such data for example as are tabulated in the literature for the yields of the different amino-acids, make the pea and bean proteins appear superior to those of wheat and corn kernels. Chemical analysis has indicated that the proteins of the pea and bean are not one-sided in composition with respect to any amino-acid which can be determined at all satisfactorily, and there are none of the essential ones absent entirely. In fact, there seem to be such proportions among them as would indicate relatively high values for these proteins and would seem to justify the characterization of these legume seeds as "the poor man's meat."

Properly planned feeding experiments were performed to determine what is the lowest plane of intake of certain proteins which just suffices to maintain a rat without loss of body weight. When the protein was derived solely from these four seeds singly, with the diet otherwise satisfactorily constituted, the surprising fact was shown that the pea and navy bean proteins have but about half the biological value of those of the cereal grains. It requires about 6 per cent. of wheat or corn proteins to maintain an animal in body weight, whereas 11 to 12 per cent. of either navy bean or pea proteins are necessary for this purpose. We have been inclined to place too much confidence in

the results of chemical analysis of foods. We must rely more upon the biological method. The latter is, however, not without its pitfalls.

A note of warning should be sounded against an over enthusiastic and indiscriminate application of certain types of experimental data from feeding experiments with restricted dietaries, especially where children are concerned.

I have in mind particularly the type of experiment in which there is a "diet squad," living for a brief period on rations which may be entirely inadequate in their make-up for the maintenance of health over a long period. They may not be, however, of such a character as to influence the well-being of vigorous men or women in the prime of life, especially when the experiments are of but short duration. The deductions from such data are of no value, and may be pernicious when interpreted to apply to the solution of problems relating to the nutrition of the child. In some measure the same caution applies to such admirably controlled experiments as have been recently described, in which it appeared that the nitrogen of the potato is of extraordinary food value. Results which have recently been obtained in my laboratory, in which the nitrogen of the potato served as the sole source of this element, and the diets were satisfactorily constituted in all other respects, and the element of growth or maintenance over a long period was involved, have demonstrated to our satisfaction that the nitrogen of the potato is of decidedly lower biological value than that of the cereal grains, oats, wheat, and corn. Students and teachers who are not themselves closely in touch with the experimental procedure, are liable to underestimate the danger of error in accepting the results of short experiments. They should fully appreciate that it is not safe, with such data as a basis for deductions, to make recommendations concerning comparable dietaries for consumption over a long period of time. Such deductions have not infrequently been made, even when the claims of the author as to the scope of application were properly qualified.

The problem for which there is no easy solution, is that of acquiring judgment as to the worth of different experimental data. It must be admitted that intelligence, interest and wide reading will not assure the acquisition of such judgment. It is to be gained only by actual experience with the experimental method of study, coupled with an amount of critical reflection on the data of others, which will tax the strength of the most vigorous and courageous.

The importance of protein has been in the past emphasized to a degree which minimized the importance of all other factors in the diet except energy value. It is now clear that the composition and amount of the mineral constituents of the food is a matter of very great importance, and that variety and wholesomeness in the food supply does not at all assure that this part of the diet will be satisfactorily constituted.

Aside from energy, protein, and inorganic factors, a diet to be adequate, must contain three substances, the chemical natures of which are as yet unknown. When the diet is satisfactory, except that it lacks the fat-soluble A in sufficient amount, animals develop a peculiar edematous condition of the eyes and soon become blind. The addition of the missing dietary essential leads to their prompt recovery. This eye trouble is a type of xerophthalmia. The fat-soluble A is found most abundantly in butter-fat, milk, and egg yolk, and to a lesser extent in the leaves of plants. It also is found to some extent

in seeds, but is in most seeds in too small amount to supply the needs of a growing animal. Such foods as are derived from the endosperm of the seeds do not contain this substance. It is not found in any vegetable fats or oils. Muscle tissue and the body fats contain very little of this substance but the glandular organs contain more of it. The water-soluble B is present in abundance in all natural foods except those derived from the endosperm of the seed, e. g., bolted flour, degerminated cornmeal, polished rice, starch, sugars, and fats and oils of both animal and vegetable origin. When the diet lacks this substance, but may be otherwise adequate, experimental beri-beri characterized by paralysis results.

There are certain general statements which can now be made concerning the dietary properties of the several classes of natural food-stuffs, which seem to me to greatly simplify the problem of instructing students in the wise selection of foods and making such combinations as will assure a safe diet. In so far as the peculiar qualities of the natural foods have been determined with certainty, it is presented in the following summarized form. All students should be thoroughly impressed with the following facts:—

1. That food-stuffs may be logically classified into groups which possess special properties, and that certain combinations of these, though their composition as shown by chemical analysis may appear good, do not give satisfactory results in the nutrition of man and animals. In fact, the recent work in the study of nutrition has made possible the introduction of a new feature in discussing the properties of foods on the basis of the data obtained by the biological method, i. e., their properties as revealed by properly planned feeding trials.

2. It may now be considered definitely established that it is not possible to secure adequate human nutrition with diets derived solely from seeds, no matter how complex the mixture; nor with combinations of seeds with meat; nor with seeds and tubers. All these types of mixtures of sound and wholesome food-stuffs fail to maintain the highest bodily efficiency, resistance to disease, and capacity to produce and rear young.

3. The reasons men and animals do not thrive on a diet derived entirely from seeds are found (a) in the relatively low inorganic content, their deficiencies in this respect being limited to the elements sodium, chlorine, and calcium, and possibly to a slight degree, iron also; (b) in the relatively poor biological value of their proteins; and (c) on the low content of the unidentified dietary essential, fat-soluble A. The seeds fail to supply enough of this substance to support normal well-being over a prolonged period.

A young animal fed on any one of the ordinary seeds such as wheat, oats, rye, barley, peas, beans, hemp seed, millet seed, fails to grow. It will likewise fail to grow on a mixture of a seed with a purified protein such as casein; or of seed with such salt mixture as makes good all the deficiencies of its inorganic content. A small amount of growth may be obtained on such seed and salt mixtures in a few cases, but it fails to induce even half the normal amount of growth, and reproduction will be wanting and the span of life very brief. With mixtures of seed and a growth promoting fat, such as butter fat, there is no growth whatever.

When two purified food additions such as protein and salts, protein and a growth-promoting fat, or a salt mixture and a growth-promoting fat are added to a seed, growth is secured in those cases only in

which one of the additions is a salt mixture. Even with these, there will be practically no reproduction, and the span of life will be short—about a third or less of the normal life period of the well fed animal in the case of the rat. With three purified food additions—protein, salts, and a growth-promoting fat—the cereal grains are so supplemented as to be complete from the dietary standpoint.

Since the seeds are all constituted on the same general plan, it follows that it should be impossible to secure adequate nutrition with any mixture of seeds, and numerous trials have shown this is the case. The protein factor in mixtures of seeds may be of very satisfactory quality in some cases, so that with certain seed mixtures the dietary deficiencies are reduced to two, viz.: the inorganic content and the content of the fat-soluble A.

4. There are two classes of foods, milk, and leafy vegetables, which should be designated as protecting foods, because they are so constituted as to make good the dietary deficiencies of the seeds and tubers which nevertheless must always remain our principal sources of energy and an important source of our protein and inorganic salt supply. Milk and the leafy vegetables have a value which cannot be expressed in terms of energy or of protein. They are protecting foods not because they furnish elements of mystery which are not to be had in other foods, but because they correct the faulty composition of the seeds and tubers and the seed products in respect to protein, inorganic salts, and the fat-soluble A.

5. While it is a mistake to derive the diet too largely from the seeds of plants, such as wheat, oats, corn, rye, barley, kaffir, peas, beans, peanuts, it is a still greater mistake to derive the diet too largely from products prepared from the endosperm of the seeds. In this group are bolted flour, degerminated cornmeal, polished rice (rice which has been deprived of its germ and bran), starch, sugars and syrups. Such a list of foods will not maintain health, even when supplemented with fairly liberal amounts of meat and fats. This is the type of diet which is being employed in certain parts of the South at the present time, especially in those parts where pellagra is prevalent, and is without doubt a predisposing factor in the causation of the disease. This conclusion is supported by the demonstration of Goldberger, that the disease yields fairly readily to suitable dietetic measures. The use of liberal amounts of tubers such as potatoes and sweet potatoes will not safeguard the health of the people living on such a diet. It is likewise not easy for them to eat a sufficient amount of the leafy vegetables to correct the faults in such a diet. The use of liberal amounts of milk is the most important change which could possibly be made in those regions where pellagra is common. Meat does not take the place of milk in the diet.

6. The use of milk is the greatest factor of safety in our diet. We have been deriving from dairy products in the past about 18 per cent. of our food supply; the same is true of the leading nations of Europe, but some of them, as the Swiss, have used much more milk than we have. Do not attempt to compare the cost of milk with that of other foods. It is also starting from a wrong premise to compare the cost of wheat, corn, oat and rice products, with that of leafy vegetables, such as cabbage, cauliflower, Swiss chard, collards, brussels sprouts, lettuce, celery, spinach, and onions. Look upon these as protective foods and eat of them liberally. They should not be considered foods

of low value because they contain much water and but little protein, fats, or digestible carbohydrates. What they possess of the energy yielding foods and proteins are good, but they stand in a class by themselves among the vegetable food-stuffs in the character and amount of their mineral content (in dry leaves from three to six times that of the seeds), and in their content of the unidentified dietary essential, fat-soluble A. In a general way they supplement the seeds and tubers.

The results of experimental feeding reveal the natural foods in a new light, and warrant their classification on the basis of function rather than of chemical composition. This is well illustrated by the pronounced differences in the dietary properties of the leaf of the plant as contrasted with the seed. The reason for this is found in the difference in the function of these parts of the plant.

The seed consists of a tiny germ composed mainly of cells and a large endosperm which is principally a package of reserve food materials, and is comparable to a mixture of purified protein, starch, sugars, fats, and inorganic salts. There are, of course, some cells in the endosperm through whose functioning the reserve food materials are deposited so as to form the peculiar structures seen in the seeds, but in a general way the seed as a whole is relatively much reserve food, and relatively little cellular material.

The leaf, on the other hand, is the laboratory of the plant in which are built up proteins, carbohydrates, and fats. While there are some leaves which serve as storage organs, and are gorged with reserve food-stuffs, the typical leaf is on both its surfaces a mosaic of actively functioning cells and the dry leaf is much more rich in cellular materials than is the dry seed. The unidentified food essentials, fat-soluble A and water soluble B, appear to be associated with the cell and not with the reserve food-stuffs, and are accordingly more abundant in certain types of leaves than in seeds.

The germ or cellular portion of the seed is richer in mineral elements, and in the dietary factors A and B, than is the endosperm, especially that part which appears in bolted flour, degerminated corn meal, and polished rice. Furthermore, the proteins derived from the germ are symmetrically constituted in that they yield all the amino-acids of complete proteins and none in excessively great or small amounts. The dietary properties of the germ are, therefore, very different from the endosperm and resemble those of the leaf.

The tubers such as the potato and sweet potato, and the root crops, such as beets, turnips, radishes, are storage organs and, so far as they have been studied, tend to have properties similar to the seeds rather than to the leaves of the plant.

It should be emphasized, however, that there are some variations in the dietary properties of the different seeds. These depend upon the relative amount of the germ and the cellular elements just beneath the bran layer and in the endosperm on the one hand, and the amount of reserve food on the other. Doubtless very appreciable difference will be observed between the dietary properties of roots and tubers depending upon whether or not the skins, which are rich in cellular material, are eaten.

Variation is likewise seen in the special value of leaves. In fleshy leaves like the cabbage, the leaf is specialized in some degree to act as a storage organ for starch, sugars, etc. Other leaves contain a

delicate skeletal framework with little reserve food substances. In this class are the thin leaves which dry quickly when the plant is cut.

A similar contrast is seen between the dietary properties of the muscle tissue (steak, ham, chops) of an animal as compared with the glandular organs (liver, kidney, sweetbreads). The former are highly specialized contractile tissue, and comparable with the seeds, especially in respect to the character and amount of the mineral elements, the content of fat-soluble A and water-soluble B. The latter are organs rich in cells and accordingly fall into the same general class as the leaves in their quality as food-stuffs. The character of the inorganic content of the glandular organs is not so satisfactory for making good the deficiencies of seeds as is the inorganic content of leaves.

While the classification on the biological basis cannot with safety be pushed to an extreme, the dietary properties of the food-stuffs can be predicted in a general way from the function of the product used as food. While products having the same function may properly be compared with each other on the basis of chemical composition, tissues of either animal or plant origin which are rich in cellular structures cannot with safety be compared from the dietary standpoint with storage tissues. This classification of the food-stuffs on the basis of function, with emphasis on the fact that most of the food-stuffs have deficiencies which are corrected by milk and the leafy vegetables, should form the main thesis of the teacher of nutrition and dietetics. As the other subject matter of the course is presented these facts should again be reiterated.

From what has been said it will be appreciated that while variety tends to make in some degree for safety, the idea that a varied diet will necessarily promote health has in the past been accepted with too much confidence. The diet will be inadequate even if it is made up of a half dozen kinds of seeds such as the cereal grains, together with the legume seeds and potatoes or other tuber or root foods, even when these are supplemented with moderate amounts of meats and small amounts of the leafy vegetables. I do not mean to say that such a diet as that last described will lead to complete failure within short time. Human experience teaches the contrary. What I wish to emphasize is that such a diet will not permit the most satisfactory development, nor will it promote health, resistance to diseases, or efficiency and longevity in the same degree as a diet containing liberal amounts of milk and leafy vegetables.

Two facts stand out with great prominence, viz., the paramount importance of milk as a regular constituent of the diet, and the great value of the leafy vegetables. If everyone in the United States could be taught that these two classes of foods are protective in character, in that they correct the faults in any other foods which we are likely to consume, and that it is a duty to include a fairly liberal amount of each of these in the diet each day, the benefit which would come from the knowledge would be greater even than that derived from the knowledge we now possess concerning immunization against diseases. Everyone should be taught that it is a mistake to buy any meat until each member of the family has a pint of milk each day.

DISCUSSION.

Q.—Does condensed milk have the necessary ingredients and dietary properties, the same as fresh milk?

A.—In condensed milk I think the situation is pretty clear. There are two terms that apply to canned milk—one is condensed milk which means that the milk is not only evaporated but that sugar is added; evaporated milk is canned milk which is evaporated. I have talked to many clinicians of wide experience, and there seems to be a unanimity of opinion among pediatricians that any baby that is fed for a protracted period on canned milk will very probably develop scurvy or rickets or both. The reason is clear. We can produce scurvy very readily in monkeys and it occurs fairly frequently among infants so that there is a good chance for observation.

I mentioned that out of the three necessary elements in the diet which are unknown, the most unstable is the protective one against scurvy. If an infant is given canned milk it should be given orange juice every day. In this way he will not contract scurvy, but there is no protection against rickets. The factor of great importance in producing rickets is insufficient calcium. This has been proved by the production of rickets in animals. One of the most important factors in producing rickets in animals is to deny the young animal calcium. You cannot produce it that way if the rest of the diet is satisfactory.

I am very much inclined to believe from my own observations in both animals and infants that the calcium is not absorbed so easily from heated milk as it is from fresh milk. This is one of the factors involved in the common occurrence of rickets in infants. Rickets probably occur as a secondary complication following debility from some other cause. It may be that the determining factor is an acute intestinal infection which lowers the resistance of the child and changes the character of the mucosa of his intestines and lowers his general ability to utilize and absorb food stuffs; but the thought that I want to emphasize is that it is inexcusable to feed an infant on canned milk whether it is sweetened or unsweetened, for any long period. This is said in spite of the testimony of numerous physicians that infants who were not thriving improved on being changed from fresh or pasteurized milk to canned milk. I do not question their accuracy.

In all probability the good results of changing from a normal milk, in the case of an infant that is not thriving, to a sweetened or highly sweetened canned milk is due to the change in the digestive tract caused by the introduction of cane sugar. It would be better if a child is not thriving on milk, and in the judgment of the physician it would do better if cane sugar or milk sugar were added to the diet, to put plain wholesome sugar into plain wholesome milk and give it that; because you get the same effect on the bacterial flora in the intestinal tract and you do not put him up against taking milk which is in some degree objectionable due to the fact that he cannot get calcium from it as he should.

Q.—Does the same answer apply to powdered milk?

A.—There has been so little experience on the part of pediatricians with powdered milk in infant feeding that I do not believe one can make any very confident statement on its value in infant feeding. Some who have been using it for six months have expressed the view, but not officially, that the results will not differ greatly from the

results of feeding canned milk to children. I think there should be no compromise in the matter of infant feeding. They should have wholesome, clean, fresh pasteurized milk.

The danger of contracting other diseases from unheated milk is so great that, in cities especially, children should be fed on properly pasteurized milk that is handled in a cleanly fashion, is properly refrigerated, and is properly cared for in the home. Any heated milk has the disadvantage that it does not protect against scurvy. I say this from the experience of many others in children. One physician recently stated that in his practice a number of cases of scurvy, and real scurvy, have developed from giving the children heated milk. It is a very simple thing to overcome that factor, but it is not a simple thing to make the child as well off on canned milk as he would be on the same quantity of fresh milk properly pasteurized.

Q.—You speak of thin leaved and thick leaved vegetables, and you speak of one of those important unknown necessary quantities which are present in thin leaved vegetables. Which are the edible ones that contain that unknown quantity?

A.—There are surprisingly few leaves that are so mildly flavored that they are acceptable to the human palate. The only leaves which we universally eat are spinach, lettuce, cabbage, cauliflower, brussels sprouts, turnip tops, beet tops, dandelion and few others. In some parts of the country they use a leaf called lamb's quarters. Among these the thin leaves are the best. Spinach leaves are among the thinnest. There is a variation in the special value of leaves. The fleshy leaves act as storage organs for starch, sugars, etc. This is true to some extent in cabbage, and to a less extent in cauliflower. They have greatly thickened stems which are a repository for starch. The thinner the leaf the greater the proportion of the total leaf that actually consists of active cellular protoplasm which possesses the function of the active cells. The thin leaves possess to a high degree the peculiar quality which all leaves possess to some extent.

Q.—Is this affected by cooking?

A.—As far as I can determine, food stuffs do not deteriorate in ordinary cooking except in their protective action against scurvy. Foods cooked by certain processes such as the making of soda biscuits, or the cooking of beans or peas with soda is a practice which is very common owing to the fact that soda hastens the rate of cooking. Soda is an alkaline substance, and when we put enough soda into any foodstuffs to make it cook rapidly you put in enough to make it alkaline; when you do this and cook it for a while you practically destroy its capacity to prevent beriberi, practically destroy its capacity to prevent xerophthalmia, and certainly destroy its capacity to prevent scurvy.

Q.—What would become of a man, or a monkey, or a guinea pig fed exclusively on milk of a good quality?

A.—Milk as a sole diet over a long period is not a highly satisfactory diet. It is pretty good, but it is not so good in the long run as a diet that is supplemented by carbohydrate mixed food.

At one time, ten years ago, I took a young pig that was still nursing and fed it exclusively on milk. It weighed about two pounds at birth, and at thirteen months it weighed two hundred pounds. It did pretty well, but if you apply the critical standards of judgment to your observations—not only how fast they grow, but the life history

and the performance of the individual under the stress of reproduction, the span of life, and when the signs of senility first appear—you find you can do decidedly better with a mixed diet in the long run. After the first month, the infant should have orange juice daily in the diet.

Q.—Are there any other fruits that contain the dietetical essentials, except orange juice?

A.—These qualities are found in almost every fresh fruit with very few exceptions. Lemon juice is very much more effective as an antiscorbutic than orange juice, but I would not advise giving lemon juice to a young baby. Cooked or dried fruits lose these properties. Cooked or canned tomatoes are the one food which retains its antiscorbutic properties to a high degree after cooking.

Q.—What is the value of asparagus?

A.—Asparagus is rich in tissue, full of starch and sugar, and should be classed with the leaves. This is also true of string beans.

Q.—What are foods that are high in calcium besides milk?

A.—The only foods that are high in calcium are milk and the leaves of plants. All leaves have similar inorganic content, and differ strikingly from the seeds. Every leaf has five or six times the cellular content of seeds; the leaves are very rich in calcium content and the seeds very poor.

Q.—You traced the relation between the physical development and the mental development and the value of milk in the diet. What about the American Indians? Were they, before they were perverted, a hardy race?

A.—I talked this morning about a protective diet being made up only of two general elements—one containing milk, and one containing the leaves of plants. I should have mentioned a strictly carnivorous diet. When I say that meat possesses certain disabilities from a dietary standpoint, you will recall that it was muscle tissue I was talking about; and from my own observations and from the observations of others it has been shown that animals restricted to a meat diet fare very badly. They suffer from skeletal deterioration if grown, and fail to develop properly if they are young.

When you consider the habits of men who live on a carnivorous diet, it is very interesting; and when you consider carnivorous diet and the dietary habits of carnivorous men and carnivorous animals, there is a certain similarity. It becomes necessary to inquire how we could make up a carnivorous diet. The general clue to the situation is this: Whenever a carnivorous animal such as a lion, tiger, etc., kills an animal for prey it always follows this order in the choice of the parts of its victim—it cuts the throat and takes the blood as the first and best thing; then it opens the brain cavity and eats the brain; and then it will open the abdominal cavity and eat the glandular organs. The same dietary practice is followed by a carnivorous man.

I asked an explorer if he had ever seen a group of Eskimos kill a reindeer, and what procedure they followed in eating it. He said that the first thing the Eskimo wants is the fresh, warm blood; the second thing he wants is the glandular organs; they also like the marrow of the bones, and the soft ends of the bones. So that a carnivorous diet can be made pretty satisfactory, but a meat diet in the sense that we would go to a meat market and buy meat would be a total failure.

Q.—What is the correct name for this unknown element in the diet?

A.—I have a list in my laboratory of twenty-three names that have been applied to the food complexes, the chemical nature of which we do not know. Among these the term *vitamine* has been widely used,

Q.—You stated that the average quantity of milk for the average human was a quart a day whether it was taken raw, or mixed with food, or as butter. Was that the idea you wished to convey?

A.—That is perhaps the most accurate statement applicable to the practices of daily life that I can give. I will add that in the diet of the adult I see no reason why canned milk and powdered milk should not be used extensively. I do think it is morally wrong, however, in the absence of fruit juices to restrict young infants to that kind of feeding. The fact will always be with us that where a sufficient amount of milk is produced to meet the requirements of the public for all seasons of the year, there will be a season when there will be a surplus of milk and it should be taken care of so as to make it available in the time when it is not so plentiful. The making of milk powders and canned milk is a legitimate business. For the present, we should see that these foods are used in the diet of adults rather than in the diet of infants and children.

Q.—Then, if we can interpret your teachings in a practical way, it means that if we can procure for each child, beginning with infancy, an adequate supply of wholesome milk and keep it up during the growing period they will be bigger, stronger, abler; have more children, and live longer.

A.—Yes. In New York City, about twenty-one per cent. of the children in school were classed as under-nourished—this does not necessarily mean an inadequate supply of food or that it was of poor quality. Some of these children might have been classed as temporarily under-nourished; they might have been in a low physical condition following some of the diseases of childhood; their health may have been impaired by infected tonsils, adenoids, and various other handicaps of childhood which might put a well fed and properly cared for child in a class called under-nourished.

But the fact remains that when such an examination is made of children in cities as well as in rural districts, it is found that there are thousands of children who are not properly fed. If we could secure for these children an adequate, wholesome, and satisfactory diet we would furnish them with an opportunity they do not now have; namely, to develop physically as well as their inherited capacities would permit.

Q.—You alluded to the value of the egg, and its low calcium content except in the shell. What is the practical application of that?

A.—The practical application is not that we are to eat egg shells, but that eggs do not have as important a place in our diet as milk and the leafy vegetables. Eggs have an important place in cookery and are a perfectly good food, but we must not rely upon them to replace milk. I may say that the chick absorbs forty per cent. of the calcium in the shell during incubation.

Q.—What about sugar?

A.—That is another one of the food stuffs which is important as an appetizer. We do not need any sugar. We would be just as well off without sugar if the diet is properly balanced and well regulated. **There are periods in the history of mankind when physical develop-**

ment was in a high state of perfection, and the people did not eat much sugar—they got some sugar from fruits. A hundred years ago, we were using eleven pounds of sugar per person a year; before the war, we were using eighty-six pounds of sugar per person a year. We should use less sugar. It is all right to use some; it is all right to use it to modify the bacterial flora in the intestinal tract of infants. Some of the anemia is due to the use of too much sugar. Meats are the most attractive of our foods; there is nothing we will eat more regularly except when we have acquired an artificial appetite for sugar. There are two classes of food stuffs that are highly attractive—meat and sugar.

It is going to be a question as to whether the public will take sane advice and believe that it is more worth while to grow up with the fullest possible possession of physical vigor, and to sacrifice to some extent on the taste of food and the quantity in order to enjoy the full vigor of youth, early life, and put off senility as long as possible; or whether it is more worth while to be a little less efficient and eat lots of sugar and meat.

Q.—How about fruits?

A.—I am unable to make any specific statement regarding the fruits except that they have dietary properties similar to the cereals and tubers, but are somewhat different in the quality of their mineral content. We ought to eat fruits liberally but they do not take the place of the small group of foodstuffs which I call protective. I am inclined to hazard the prediction that although the medical profession has been guided through a half century of experience in the feeding of tuberculous patients on a diet in which milk and eggs formed an important part, they could still improve their chances with a diet that contains enough of the dairy products combined with leafy vegetables as far as the appetite will permit.

MUNICIPAL MILK CONTROL.

By George B. Taylor, U. S. Department of Agriculture.

I am going to touch briefly upon two subjects; one, municipal milk control and the other clean milk production. In discussing municipal milk control I shall touch upon it in a general way as it affects the country as a whole but as conditions are to a certain extent alike all over the country perhaps some of the ideas expressed may be of interest to you in this State.

I am not in a position to discuss in detail the condition here because I do not know much about it. We are very much interested, however, in the ideas and plans of your Commissioner and we regard as wonderful his intense enthusiasm and the way he is transmitting a part of it to you.

There are in this State approximately 150 cities of over 5,000 population. Pennsylvania has more cities of over 5,000 population than any state in the Union. Massachusetts is second but it comes rather far down the line. During the last year we of the Dairy Division have been interested in getting information regarding milk control in cities of over 5,000 population in this country. We sent out a questionnaire in order to find out what cities had milk control, to find out how they are accomplishing it and to find some of the opinions that might be expressed.

There are about 1,300 cities of over 5,000 population in this country. We received reports from 481 only, a little over one-third, but these reports came from cities in forty-seven states and we are of the opinion that the information we received is correct.

In order to find out what the relation was between the population of a city and its control of the milk supply we have tabulated some of these results.

I have here two tables that I am going to explain very briefly. Dividing the cities into population groups we find in the 5,000 to 25,000 population group about 1,060 cities. Of these, 150 report dairy inspection, 90 report dairy inspection and use of the dairy farm score card and 63 report laboratories for analyses of milk. We find in these small groups of cities that a great many claim dairy inspection but they are not using the score card and have no laboratory. Out of 139 cities in the 25,000 to 50,000 population group 52 report dairy inspection, 32 report dairy inspection and the use of score cards and 53 report laboratories for the analyses of milk. Going on to the next population group, 50,000 to 100,000 we find about 62 cities; 26 of these report dairy inspection, 25 dairy inspection with use of score cards and 26 laboratories for the analyses of milk. Going further, from the 100,000 to 500,000 group we find 56 cities; 29 of these report dairy inspection, 28 dairy inspection with use of the score card and 53 report laboratories.

As the cities get larger we find there is more emphasis made on the laboratory control of the milk supply. Of the cities of over 500,000 population, 8 reported dairy inspection, 10 dairy inspection with the use of score cards and 8 laboratories.

We regard laboratory control and inspection as very important and going hand in hand and we think a city is doing quite complete milk control when it inspects the dairies and uses score cards and when it is examining milk from a chemical standpoint to determine its food value and purity and from a bacteriological standpoint to find out how that milk is produced and handled.

In small cities we find only 10 per cent. perhaps, of those reporting carrying on dairy inspection and the analyses of milk while in the larger cities we have practically 90 per cent. Some of the smaller cities are doing excellent work while some of the larger ones are not doing much, but it is a general rule that we have laboratory control and inspection in direct proportion to the size of the cities. The smaller cities as a rule will not do much along this line. The question arises why is this so. I believe, there are three reasons, one is lack of money, another lack of interest on the part of the people and the third lack of intelligent leadership. Interest must be aroused and sentiment created; I believe this interest and sentiment must be aroused from within. If a person from the outside goes into a city and tells the citizens they need certain features of milk control work I believe he might antagonize those citizens but if the sentiment comes from citizens themselves I believe the desired result is more likely to be attained. There is in every city some agency consisting of men and women patriotically interested in the welfare of their city and I believe it is through these agencies that milk control could be created or brought to a higher standard.

Every city contains women's associations, etc. One or more of those organizations would certainly become interested and be the nucleus for the creation of sentiment for milk control work or better health conditions. If sentiment is aroused along these lines the city authorities will certainly pay attention to that sentiment and there will be something done. It may be desirable to take an existing agency to start milk control work. The Health Officer may be intensely interested but so handicapped that he may not be in a position to do the work; but if the sentiment is created, the Health Officer given authority, laboratory facilities, clerical force and inspection force he may do excellent work.

In the first place proper laws are necessary. These laws regarding milk control must be central, concise and fair and they must be enforceable. A law which is not enforceable is worse than useless and a law which contains a single provision that cannot be enforced is rendered not inoperative but less operative. There must be a law which will cover disease among men and animals, which provides for a clean milk supply and prevents defrauding. This may be an ordinance passed by the city council or it may be an act of the legislature. I believe this law should contain the permit system. The permit system gives the milk control official a club by which he can get immediate action, where if he had to go into the courts in every case the decision might be put off. The permit system is very valuable and should be one of the features of the law. Then I believe the law should provide for the collection of samples and the entering of plants to collect samples and make inspections.

A laboratory is absolutely necessary. I am not one who believes that a laboratory can be made of a gas stove and an oil lamp; I believe we should have good laboratory facilities, chemical and bacterio-

logical. They are expensive but the average city can at least spend \$500.00 and for \$500.00 you can establish a laboratory which will serve a city of 100,000. Along chemical lines you want to show the food value; along bacteriological lines you want to show your method for the protection and handling of milk.

Inspectors should be competent and trained and should have a sympathetic knowledge of dairying. The inspector is the only man in the Health Department who is in personal touch with the dairymen and the dairyman forms his opinion of the Health Department by the inspector.

So on that account I believe that the inspector is one of the most important officials in the Health Department. The inspector will come in personal contact and he will teach the dairyman how to produce clean milk; he will note evidence of disease among the animals and among the milkers and milk handlers; he will look into the water supply and sewage disposal. I believe in inspection by the use of the dairy farm score card. It means uniformity; it promotes rivalry; it is educational; it gives the dairyman a rating so that consumers may know who is providing the best milk and it promotes system. I believe it might be possible to get a combination man for inspection and analysis of milk; in fact to perform almost all the duties of milk control work in the city.

For some time there has been an attack upon inspection of milk by people who claim that inspection does not get results and that bacteriological work does. I think this is unfortunate; I believe that inspection and bacteriological control go hand in hand and which is the more important depends upon the local conditions. For example, we sent out questionnaires and asked certain health officers whether they thought dairy inspection should be continued. We received replies from 323, of these 309 answered *yes* leaving only 14 who said *no*.

Inspection and bacteriological control go hand in hand. In the large cities bacteriological control is more important because the milk comes from long distances. Most of it is pasteurized; the Health Department assumes control of the pasteurization and watches every process from pasteurization down to the delivery of the milk, thus insuring a safe supply. In a great many of the large cities, however, we have raw milk delivered by the dairymen and I think here we should go back to the farm to look into the milk supply. It comes to the city and is sold as raw.

In the smaller cities the dairymen usually are in close proximity to the city; the milk is brought in and delivered to the consumer within from one to three hours of the time it is produced. This milk under those conditions will have a low bacteria count and it may be filthy. There the inspector should go back to the dairy farm and educate the dairyman, especially in those sections where milk control is in its first stages. He should be able to tell the dairyman how to produce milk. He should make use of the sediment test and carry back to this dairyman the cotton through which a certain amount of milk has been strained because the cotton with dirt on it means more to the dairyman than merely telling him about the bacteria count.

Another thing is publicity. Publicity may make or mar a Health Department. I believe in proper publicity; the citizens should know the standing of the dairyman who is supplying their milk. In this connec-

tion I want to mention the market contests for the bettering of milk supplies in the small cities. This is one of the features we are advocating. It is absolutely fair; it gives publicity to the work and the citizens themselves know who is supplying the best milk.

There are two kinds of market milk contests, one is the "prepared contest" in which the dairymen prepare their own samples; the other is the "involuntary" or street sample contest in which samples are taken from the dairymen and analyzed. The first kind of contest is important because it is a good advertising scheme. I want especially to dwell on the involuntary contest. The inspector takes samples of milk dairymen delivering in the city, once a month for six months. These samples are taken to the laboratory where they are analyzed for solids in fat, bacteria, sediment, flavor, odor and appearance of the bottles. These facts make up his score and the records are filed away and at the end of a certain time they are taken out and averaged. The averages then are put on a score card and each dairyman is graded. Here you have a six months record of samples taken from the dairymen at times when he did not know they were being taken. It is absolutely fair, creates rivalry among the dairymen, creates intense interest and is one of the principal factors in bettering a milk supply.

I believe that in municipal milk control you should have a full time health officer, proper laws, proper laboratory facilities, a proper inspection force and that you should have inspection and bacteriological counts. The small city will say we cannot afford to pay high priced officers and equip a laboratory, why can't we have a county inspector and one laboratory for the county? You could have a full time county health officer with a laboratory for milk control and by combining two or more cities you might be able to get better results. This has been done in other states. We know this is practical; we know that conditions can be improved by this method.

I believe that almost all dairymen really want to produce high-grade milk and that almost all dairymen really think they are doing this; whether they are depends upon their own conception of what is high-grade milk. Therefore, it is the duty of the health officer to tell the dairyman and show him what is high-grade milk. A high grade of milk is one that is safe, clean and pure. A safe milk may be defined as that which when taken into the body will not cause disease. Clean milk is one which has a low bacteria count, no sediment and a good flavor. A pure milk is one which has not been adulterated with water and from which no valuable constituent has been taken.

Two things are important, healthy cows and healthy milk handlers. When we speak of healthy cows we refer particularly to tuberculosis. I believe the time will come when we will get rid of tuberculosis in cows. The only way we will do this is by paying the dairyman for his loss and making use of the accredited herd system. We may become infected with tuberculosis from the milk of a tuberculous cow but when we become infected with such diseases as typhoid fever, scarlet fever or diphtheria it shows that the milk has been contaminated by some human agency.

We should make a rule and post it in every dairy that no person suffering from tuberculosis, any skin disease or a bad cold, or just recovering from typhoid fever, scarlet fever or diphtheria shall perform any of the labor around a dairy or handle any of the milk.

Medical inspection is a good thing but it is not carried on properly. If we could convince dairymen of the importance of keeping people who are slightly ill out of the dairy we could get much better results.

Going to the water supply of the dairy farm; this should be free from surface contamination. I have with me a moving picture entitled "Milk and Honey." This picture was made up by the Department of Agriculture for the special purpose of showing the dairy farmer how to produce clean milk in a practical way. (Moving Picture Displayed).

PASTEURIZATION OF MILK.

Mr. Ivan C. Weld, Washington, D. C.

The pasteurization of milk is the most important single step that can be taken in safeguarding the milk supply. I make this statement without reserve because I believe it to be absolutely true from every standpoint. I would not have you understand by this, however, that I would advocate in any way the lessening of any effort that may be made to secure a clean, wholesome supply from absolutely healthy cows, handled by intelligent people who are clean in their habits; and who know how to care for the cows and keep them clean, and everything in a clean condition with which the milk comes in contact.

In the earlier days, we used to hear some discussion of pasteurization as a makeshift or substitute for cleanliness. Possibly there was some excuse for it in those days—probably there was a real reason for considering the subject from that angle—but I believe that the modern conception of pasteurization as a process for the destruction of possible pathogenic organisms can now be accepted rather than the thought that it is a substitute for clean conditions.

I would not have any lessening of effort to secure a milk supply from cows of known health which have demonstrated their fitness to produce human food by any test that may be necessary to determine their fitness, and in this connection, I will not exclude the tuberculin test. I believe that it is absolutely fundamental to a healthy dairy industry. I do not mean that I would attempt or suggest the advisability of having all cows tuberculin tested in a month or a year, or five years; but rather the inauguration of a progressive policy which has a beginning at some point, and progresses by gradual steps toward some other point which is definite and conclusive.

In this connection, I believe that the policy inaugurated by Dr. Woodward, formerly health officer of the city of Washington, now of Boston, was a very progressive and intelligent policy. In about 1910 he desired, as most health officers did at that time to have all cows producing milk for the city tuberculin tested. As Professor Rasmussen told you, this does not work instantly. There was discussion on the part of the dairymen and the health authorities which naturally led to a compromise which was something like this: Those producers of milk for the Washington markets could continue their shipments but every new cow to be added to their herds could be added only after she had been subjected to and had passed the tuberculin test.

Since 1910 every new applicant for a permit to ship milk into the District has first been obliged to have his herd tuberculin tested. That was nine years ago, but it was the starting point. It is a policy which has progressed by easy stages up to the present and now practically every herd shipping milk into the District of Columbia is a tested herd. It does not mean, however, that every herd is tuberculin tested every year. That will probably be the next step, but it seems to me that in such a policy, whereby time is given for the development of intelligence and sentiment among the producers, there is an object

that can be gained which is otherwise practically impossible to attain.

I would not urge the pasteurization of milk as a makeshift for diseased animals but until we can be sure that animals are free from disease, there is a logical reason for pasteurization. I would not have you believe, because I am convinced that pasteurization is the logical, wise thing to bring about, that there should be any let-up in the sanitary conditions under which the cows are kept. We should see that they are maintained in a clean condition, and in a clean place. It is right and reasonable that milk should be produced without contamination, and especially without that contamination of which B. coli is considered to be positive evidence. It is right and reasonable that such methods in the production of milk should be employed as will give to the people of the city a milk that will be free from possible sediment and an excessive number of bacteria.

There are some people whose homes are clean not because they understand the necessity of it, but because their parents taught them to be clean. Then there are other people who are naturally careless. They were brought up that way, and it is a fixed habit with them, and they hardly know how to approach a reasonable degree of cleanliness. I don't think those people should be allowed to produce milk for human food. They should only be allowed to produce things which they cannot contaminate in the same way in which they will contaminate the milk supply.

We should not lessen our efforts to see that the utensils and the things that milk comes in contact with are clean and sterilized wherever this is possible, and it is possible on most farms. I would not have a lessening of effort to see that the milk is properly cooled and reduced to the lowest possible degree of temperature that can be secured. A spring house where the temperature of the water is from fifty to fifty-four degrees and low enough to greatly check the development of bacterial life is a good place to cool and to keep milk over night.

We must continue our efforts to have sound cattle, clean cattle, clean premises, clean utensils, and people reasonably clean in all that they do in connection with the milk supply. But after all this has been done, and after every reasonable effort has been made, I would still have that milk pasteurized because *only by pasteurization can you give to milk that final, positive element of safety which is absolutely essential in the protection of the public health.*

What do we mean by pasteurization—the process that takes its name from Pasteur? There was a time when pasteurization meant heating milk to 165-167 degrees and then immediately cooling it, and it was while this process was being followed that so much prejudice developed against pasteurization of milk. The prejudice was founded, and with perhaps some degree of reason, on a process which is radically different from the process employed to-day. In the old days when this method was employed, certain changes took place in the milk which may have changed its digestible qualities. It did change the sugar, and it did change the taste. Probably it produced some other changes like the coagulation of the albumin. It was because of these changes produced in milk by the old time process of pasteurization that the scientists sought to find a way whereby the benefits of the destruction of possible dangerous germ life could be retained without producing bad or supposedly bad effects.

And so it happened that in more recent years the scientists found that by employing a lower temperature, and adding to the process the time element they have been able to secure a maximum of efficiency without any of the changes which were considered objectionable. The process at the present time consists of heating the milk to 145 degrees for a period of not less than thirty minutes, and then quickly cooling the milk to the lowest possible temperature, but certainly to a temperature as low as or lower than fifty degrees F. When this has been accomplished, we have secured the maximum results, and that without sacrificing any of the desirable qualities possessed by the raw milk. The temperature of 145 degrees has been found sufficient to destroy all pathogenic organisms that produce disease, and this of course, is the object desired. The temperature of 145 degrees will also destroy other types of organisms which may be harmless—but no harm results in their destruction.

We have by pasteurization produced no particular change in the milk, but we have made it absolutely safe. How can we accomplish the heating of milk to 145 degrees, holding it at that temperature for thirty minutes, and then quickly cooling it?

It occurs to me that the nurses who come in contact with people in their homes and people in small communities where there are no commercial pasteurization plants may find it necessary at some time to provide milk that you have no doubt is safe. It may be that the problem that you will have to handle will be quite different from that of the man who buys and distributes milk. The pasteurization of milk in the home is a question which we will consider briefly. It can be very easily accomplished.

Take an ordinary clean bottle, an ordinary kettle, and an ordinary pie plate; turn the pie plate upside down, place the bottle of milk on it, and fill the kettle with water. Put it on the stove, using a thermometer, and keep the milk there until it reaches 145 degrees. By moving the kettle back on the stove, you can retain the temperature you have created and keep it fairly constant for half an hour. At the end of that time, add cold water and gradually cool the milk; and then by the addition of cold water and ice, if possible, reduce it to the lowest temperature you can secure; keep it as cold as possible until used. It is a very simple thing, and does not require much time, and is a process by which you can be assured of a perfectly safe milk supply.

Then, of course, there is the problem of the small town where there is perhaps a population of several thousand people and which has no single commercial concern capable of developing a pasteurizing plant in that town. This is the most serious problem we have to face. If the people in such a town would safeguard their milk supply, they must do it themselves by pasteurizing the milk in the home.

In larger cities things are somewhat different. There are usually commercial houses that are willing to make the collection of milk from the farm, and will undertake its pasteurizing and distribution. Unfortunately, they do not all succeed in pasteurizing it properly. This is where the work of the health officer and dairy inspector should be most valuable, because the proper pasteurization by a single concern of quantities of milk is perhaps the most logical and best way to secure a safe milk for large numbers of people. It is very desirable to have the best equipment to do it in a safe way.

The equipment for pasteurizing milk on a commercial scale differs greatly. The old way was to permit the operator to apply the temperature of 165 degrees, and immediately cool the milk. With that as a beginning there has been developed a great variety of appliances which may be used but probably the best development along these lines is known as the Batch System of Pasteurization where a vat or apparatus which is large enough to hold five or six hundred gallons of milk receives the heat gradually until it has a temperature of 145 degrees. The milk can be maintained at the desired temperature for the desired time, and then released from the vat, and passing over a cooling apparatus which will reduce the temperature to about thirty-four or thirty-five degrees Fahrenheit. Then the milk can be bottled, put away, and is ready for the consumer.

There are some things which enter into the system of pasteurization which should be under the observation and control of reliable people. There are too many opportunities for missteps, for accidents, and for carelessness on the part of the operator employed to entrust this work to him unless there is some competent person somewhere in connection with that work who will see that it is done and done right every time. I know of no little thing that can be used more effectively for this purpose than the automatic temperature recorder. It records the temperature of the milk from the time it enters the heating process until it leaves the vat, and it records the time at which the milk is held at the given temperature. It is a pretty good check, and one which can be employed very successfully.

I believe that much of the prejudice which has existed against pasteurized milk, and which may exist to some extent to-day, is due not to the pasteurization process itself so much as it is due to the re-contamination which occurs in the milk after it is pasteurized. By this I mean that after you have secured your milk supply and have given it the modern, scientific pasteurization that the work is absolutely useless and thrown away unless you see to it that at every subsequent stage the milk is prevented from coming in contact with anything of a contaminating nature. It is not always easy but it can be accomplished, and should be accomplished by every responsible dealer.

The first thing which the milk comes in contact with after it leaves the pasteurizing vat is the cooler which must be absolutely clean, or right then and there pasteurized milk will pick up a variety of germ life. Any pipes through which the milk passes and the apparatus which fills the bottles must be carefully cleaned. When pasteurization process was new there was no such thing as modern sanitary piping and the milk passed through iron pipes; but growing out of the necessity, the modern sanitary piping for milk has been manufactured—a piping which enables the operator to have a smooth surface with which to deal, and through which he can pass his brushes and through which he can also pass the water and steam for sterilization.

Then the next thing with which the milk comes in contact is the bottling machine, and this may be a source of trouble as it has not been found possible as yet to build a successful bottling machine without the use of rubber gaskets. Those of you who have to deal with nursing bottles with rubber nipples realize that it is not always as easy to clean rubber parts as it is to clean metal. The bottle caps

as they are supplied to the trade at the present time are not a source of danger and contamination because they are made under conditions which permit of sterilization. They come to the top of the bottles by an automatic machine, and it is no longer necessary to place caps on the bottles by hand.

Now then, having your good milk properly pasteurized and in sealed bottles, what are you going to do with it? The next thing is to maintain it at a very low temperature until the milk is left on the door step of the consumer. This can be accomplished in various ways, but a refrigerator box or storage box with ice is an absolute necessity. A system of delivery which permits the use of ice in warm weather is an ideal system. Of course this leads us to the home of the consumer. I should not undertake to suggest to you physicians and especially to the nurses how milk should be cared for in the home. Mistakes, however, have occurred and may occur again.

There are problems which develop in the home in which you can exercise a real influence, and wherever you see carelessness of that kind you are in a position to correct it. I would advise the frequent and intelligent use of a good thermometer in handling milk. Why take a chance by exercising judgment, good or bad, regarding temperatures of milk when so simple and inexpensive a thing as a good thermometer will give you the exact facts? The best milk in the world and the most carefully pasteurized, handled, and delivered to the home in good condition will go wrong if it is kept long enough at a high temperature.

Dr. Philip Rupp, chemist in the Department of Agriculture, made a rather careful study of pasteurized milk with the view of finding possible chemical changes produced by reason of this process, and in his summary and conclusion he says: "Milk pasteurized by the Holder Method at 62.8 degrees centigrade (145 degrees Fahrenheit) for 30 minutes does not undergo any appreciable chemical change." That statement should be sufficient to overcome any prejudice against pasteurization with which you may come in contact.

There is another question, however, regarding which you may have some doubt, and I want to give you the result of other observations in the actual use of pasteurized milk in infant feeding. It so happened that a gentleman who was inclined to be philanthropic, at one time established and for several years maintained a number of milk stations where both raw and pasteurized milk could be obtained.

The milk was prescribed by physicians and the work was carried out under the observation of trained nurses who visited in the homes, knew the home conditions, and gave individual attention to the babies. The babies unable to secure the right kind of milk in their homes were brought to the stations nearby and milk was distributed from the stations daily; including all, 1,128 babies were prescribed for. For various reasons 110 babies were either weighed but once, or the date and kind of milk used were not recorded. Of the 1,018 babies whose records are more complete, the physicians prescribed raw milk exclusively for 351; pasteurized milk was prescribed exclusively for 557; and for 110 babies both pasteurized and raw milk were prescribed at different times. That is to say, the babies were changed from raw to pasteurized milk, or from pasteurized to raw milk one or more times by the physicians in charge.

In finding the rate of gain made by each group of babies, the number of days between the first and last weighing were determined, and the gain or loss in ounces noted. In a very small percentage no gain or loss was recorded during the feeding period. Nevertheless, the number of days were included, in every case, regardless of the health of the babies or results of treatment. In the raw milk group which included 351 babies, for whom raw milk was exclusively prescribed, we found the average net gain per day per baby to be .4030 ounces. In the pasteurized milk group, which included 557 babies, for whom pasteurized milk exclusively was prescribed, we find the average net gain per day per baby to be .4077 ounces—the average difference in favor of pasteurized milk amounting to .0047 ounces per day per baby.

As previously stated, the physicians prescribed both pasteurized and raw milk for 110 babies during one or more periods. It will be observed that in this group the same baby received both raw and pasteurized milk at different periods as the physicians prescribed, and also that the babies were subjected to the same home influences and under the observation of the same caretakers and physicians and nurses. The average net gain per day per baby on milk was .4312 ounces. On pasteurized milk this same group of babies averaged a gain of .4607 ounces daily. The average difference in favor of pasteurized milk being .0295 ounces per day per baby.

This led to the conclusions. A. The slightly greater rate of gain made by babies when given pasteurized milk may possibly be attributed to the destruction of certain possible disturbing elements which if present in milk not perfectly pasteurized may tend to retard digestion or prevent the fullest possible assimilation of the milk. B. The actual increase in weight of the babies would seem to be convincing evidence that proper pasteurization does not impair the digestibility of milk or cause injury to the nutritive properties for infant feeding. C. The decidedly greater rate of gain of the 110 babies when fed on pasteurized milk over the gain of the same babies when fed on raw milk would seem to be corroborative and conclusive evidence that no injury to the nutritive properties of milk actually takes place as a result of modern, scientific pasteurization and that even the best supply of raw milk may, at times, be improved by such process.

I hope I have said something which may stimulate thought, and possibly discussion.

Q.—I would like to ask, since there is danger of contamination owing to considerable handling, if it is practical or desirable that some sort of pasteurizer be invented whereby the milk could be pasteurized and cooled in sterilized bottles?

A.—There are numerous pieces of apparatus that have been devised for that very purpose. Some of these have been placed on the market, and have been used for a longer or shorter period. While there may be some advantages there are other disadvantages which seem to outweigh them. It is not difficult to create conditions which will prevent the re-contamination of milk in the very slight amount of handling it receives after pasteurization. In the pasteurizing of milk in the bottles there is difficulty such as the breaking of a large number of bottles, swelling of the milk during the heating and contraction during cooling to a point of perhaps one-half inch or an inch below the top of the bottle, necessitating the use of a larger bottle

if you are to give your customer a full quart. As yet the process does not seem to meet with that degree of success which makes it of much value.

Q.—How much is added to the cost of milk by a thorough process of commercial pasteurization?

A.—That is a very good question. I wish I could give you just as direct an answer as the question deserves, but costs will vary under different conditions, depending upon the amount of milk handled, and other factors. The actual cost of pasteurization is not very great. It is absolutely insignificant when compared with the value of results obtained. It is not more than a fraction of a cent per quart—just how much I would not be able to state at this time.

Q.—Is there any benefit in the flash method of pasteurization?

A.—I think that the gradual heating of milk to the desired temperature is preferable to the more rapid method. The flash method was the original method and was employed for a long time, but in more recent years has gradually become practically eliminated. It is still used to a slight extent by some of our commercial dealers. Of course, there is another view of pasteurization which was not touched upon this morning, and that relates to the pasteurization of cream for butter making, which has become quite general in the United States in recent years. By the pasteurization of cream these two things are accomplished: First, the destruction of any possible pathogenic organism; and second, the destruction of other organisms which may produce an inferior flavored product; and by the destruction of these organisms and the introduction into cream of pure lactic acid organisms a more agreeable flavor and a better product results. The flash process, as far as butter making is concerned, is still in use to a considerable extent.

Q.—Of what does the flash method consist?

A.—The flash method consists of heating the milk to the desired temperature in the shortest possible time, and this may be accomplished in a fraction of a minute; this being so, it is commonly called the flash method.

Q.—In Pennsylvania we have had a number of outbreaks of typhoid that were due either to refilling milk containers on the wagon, or to improper sterilization. We find that these are usually on long routes of dairies of comparatively small size, the distributor handling about fifty or seventy-five gallons of milk a day. The method of cleaning is by hand with a little soap powder. The output is so small that a proper sterilizer seems out of the question. Would it be possible to get favorable results by the use of a disinfectant, and in such a case would hypochloride of lime be the proper thing to use?

A.—The first part of your question I would attempt to answer by saying that I would not advise the use of a chemical disinfectant. I believe that in a State where you have such an abundant water supply as well as coal and wood that by a combination of these natural resources, and with a reasonable degree of intelligence you can get better results: namely, clean utensils; and, at the same time, develop a little different line of thinking in connection with the dairy industry. We do not want to have a milk supply which has to depend on the use of chemicals either in the cleaning of the utensils in which milk is delivered, or in the handling of the milk itself. In the second

part of your question I have had no experience and would not be able to name any substance which would be satisfactory.

Q.—The question with us is one of administration. When we go to a dairy farm and ask about the cleaning of utensils, the answer is "We use boiling water and soap"; but they do not. The temperature of the water should be at least 165 or 170 degrees; when we test it it is only about 100 degrees.

A.—The dairy inspector has a great work to perform in an educational way, if possible; if not possible, then by the "big stick"—either drive that man into business or drive him out.

Q.—That means State-wide dairy inspection?

A.—It means very careful inspection by the municipalities.

Q.—Are there any substitutes for glass bottles as containers?

A.—At various times there have been attempts by manufacturers to place on the market a paper container which could be filled in a way similar to the way that glass bottles are filled, and I believe that there are one or more such on the market now. There are some objections possible to the paper container, and one is found in the fact that they are much more difficult for the delivery man to handle; they are also somewhat more difficult to refrigerate—the ice may dent the paper container; and if a delivery man picks up three or four bottles exerting enough pressure to hold them between his fingers he may push up the cap and spill the contents; another thing which ought not be overlooked is that that paper container may be contaminated before the milk goes into it. It does not solve the problem very well.

Q.—Could not those containers be sterilized by steam?

A.—Not without the destruction of the bottle.

Q.—We have a perfectly definite problem before us, and all that you brought us we mean to use. I am going to give you a specific problem: Take a town of three thousand people; it is served by twenty milkmen who are delivering the milk in glass bottles; the milk is clean, but they are under no supervision—the health department is not working; every mother in that town, and every citizen in that town wants a clean, healthy milk supply; every one is available as one of an army to get it. Now how do we get it? Tell these people how to proceed in each community to get a safe milk supply.

A.—That is a splendid question. I wish I could give you a splendid answer.

Q. (Continued)—Understand there are organizations in that town—there are benevolent associations, the sewing society, the associated aids, the chamber of commerce, rotary club; and all are crazy for a real job; then there is the burgess whom they can drive if necessary; then there is the tuberculosis society, the County Medical Inspector, and the State nurse all crazy to get in on it; but no team is formed.

A.—I think the best answer I can give you is to say that I do not know; but where there is a will there is a way, and where a situation exists a remedy can usually be found, but it is somewhat difficult to find the desired remedy for the particular case you have diagnosed.

Q. (Continued)—Now that health department has the right to make any wise, legal ordinances; they have the right to control the milk, its production, delivery, etc., but no one has done it.

A.—I have known of similar conditions in the past. In a community like that it is possible to secure one of the best possible supplies; but just where to begin, and just what to do is a matter for local study. It would be difficult to give more than an outline for such a proposition. I should first look for aid from local sources; I should try to make a survey of that situation to see how much milk was produced, and who was producing it; and when I had satisfied myself that it was insanitary to a greater or lesser extent—I should look for assistance.

That assistance might be given in part by the State Department of Health, the State Department of Agriculture, and the Federal Department of Agriculture; but, better yet, I think results would be accomplished if there would be a combination of such agencies because each would bring to the other certain experiences which will make for the general good. I know that the Federal Department has gone into towns of that size and made a survey with the co-operation of the local or State board of health, and with the co-operation of the Department of Agriculture, and they have been able to eliminate the worst insanitary features at the start and to eliminate from that town the worst of the supply; then by a system of scoring the dairies and publishing the results they have been able to stimulate a spirit of rivalry, to a certain extent, among the producers of milk in that community; and when that spirit can be started and developed you have gone a long way toward the solution or at least a partial solution of the problem.

If you have twenty milk producers and five are impossible and are eliminated by the State Department of Health, the State Department of Agriculture, or the Federal authorities, you will relieve the situation because it has not been done by a local official.

An outsider can go in and do things which a local man cannot do. We will suppose then that five of these dairies are eliminated because of insanitary conditions, and that the remaining dairies score from thirty to seventy-five points and those scores are posted. What is the result? The man with thirty points becomes more active, and the man who scores seventy-five points finds that by changing his methods he may be able to score eighty.

Along with the development of the sanitary discussion there should come requests for herd testing. A man might be sent there to make these tests and advertise the facts. When that has been done and business relations between the producer and consumer have become adjusted about five more of the dairymen will be eliminated. The business will gradually come into the hands of about ten good men, by the gradual process of elimination. Then let us suppose that the matter goes still further and one of those ten men is enterprising enough to study the question of pasteurization, but he feels that his project may not be quite large enough to warrant the installation of a pasteurizing system; and suppose two or three of the dealers go together and pasteurize their milk and advertise the fact.

What is the result? You have then several herds of tested cattle and you have one supply of properly pasteurized milk in that town, and in the course of a year or two you will have a greatly improved situation. That, of course, is not a very good answer to the question, but the question is complicated and required a complicated answer. It is the development of the conditions which you find by gradual and

easy stages into the conditions as you want to have them. I believe such a plan could be worked out by reasonably conservative people in a safe, sane, and sensible manner; and I think the results could be accomplished within a reasonable time.

Q.—In the development of that program would it be a practical thing to urge someone or perhaps the municipality itself to establish a pasteurizing and cleansing plant, taking over the product of the various producers selling it back to them pasteurized and in clean bottles? Or for the municipality itself to enter into the distributing business, cutting down overhead expenses, etc. One or two of the cities in Pennsylvania are working along the line of a community pasteurizing plant, and I want to know if you think that a practical plan for urging throughout the State?

A.—I am inclined to say that you should go slowly in urging this problem. In some cases it might be successful, but in others it might not. One of those cases is where the Public Health Service has interested a group of business men to install the equipment for handling milk according to the modern ideas. There are a great many things to be taken into consideration in such an undertaking, and unless you have an absolute monopoly of the milk supply of that town I do not believe it can be worked out in a satisfactory way. In the one instance I have in mind it is not working out satisfactorily. I know of nothing that can be done by the government more efficiently and as cheaply as it can be done by a private enterprise. We see examples on every hand of the expenditures of large sums of money with comparatively small results, and I think that the municipality which attempts to enter the milk business is undertaking a serious proposition; and I should have no hope of their carrying it through without raising money by taxation to make both ends meet and pay the bills.

Q.—Would it be possible for a private concern to enter into the pasteurizing business and the cleaning of bottles for local producers, charging a certain sum per gallon for their work? Has that been tried?

A.—I know of no instance where it has been tried. Of course, if you are going that far, it is only a short step to go further and deliver the product. I doubt very much if the milk problem can be handled as is the ice problem where one large firm makes all the ice and sells it to smaller dealers who deliver it to their customers.

There has been a lot written about the crossing of delivery routes and lost motion in the delivery of milk supplies and, of course, that is true to a certain extent; but it is not true to the extent we have been led to believe. As a matter of fact there is probably as much lost motion in the country in delivering the milk to the railroads as there is in delivering it from the station platform to the consumer. Then in the city it is not merely a question of cross routes, it is largely a question of man power and the amount of work a man can do in the twenty-four hour period and do it seven days in the week. When you send a man out with a wagon load of milk, say four hundred quarts, and he calls at three hundred homes and delivers the milk, keeps his accounts straight, collects the empty bottles and returns them he has done a day's work. It does not matter whether he delivers two or three bottles in one block and a few more in the next block, or whether he delivers them straight ahead from door to door.

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What is the result? You have one supply of product and in the course of a year or situation. That, of course, is but the question of development. It is the development

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EDUCATION.

SACRE—Major William
tion.

BLIC SCHOOLS—Dr.
of Public Instruction.

Q.—You laid special stress upon heating the milk. What is the answer to keeping the milk cool? The farmer does his milking in the evening and again in the morning and that combined product is placed on a hot station platform where it stands for several hours and gets heated up again.

A.—It is in part a question relating to farm practices. It is not difficult to cool the evening's milk to the temperature of spring water by leaving it cool over night, and it is not difficult to cool the morning's milk to the desired temperature and start it off to the station with as low a temperature as the water in the spring. There is no reason why these cans cannot be covered during the summer season with a wet blanket which affords protection from the heat, sun, and dirt. Now then arriving at the station platform—if the man has timed his work carefully and well in the morning he is not likely to be there much ahead of the train, so there should be little delay at the loading platform.

We all know, however, that during the last year or two train service has been greatly delayed and there have been numerous occasions when milk has been spoiled either waiting for the train to come along and pick it up, or on the train before it has reached its destination; and the inadequate train service for the transportation of milk is a live subject and one which should be taken up and handled vigorously by the dairy interests and other interested parties. We have protested many times in Washington and have secured substantial results. One of the latest protests was registered very recently because of the thousands of dollars worth of this splendid food product which is being wasted every day because of improper transportation facilities, and the failure of transportation companies to refrigerate cars and to move trains promptly. We hope that the protests will have accumulated to the extent where some action will be taken.

Q.—Every one carries milk bottles by the mouths and we have evidence that many infections are carried in that way. I was wondering if there is not a more practical way to protect the mouth of the bottle by an additional cap of some sort?

A.—There are several devices on the market, but I have not learned of any contagious diseases spread in this manner. There is a somewhat expensive device on the market now which gives some protection by eliminating the necessity of the fingers coming into contact with the top of the bottle. It might be money well spent, but it would add considerably to the present price of milk.

Q.—What is the economic use which can be made of milk which has been condemned for raw consumption—either dirty, soured, or high bacterial count?

A.—If the milk is dirty, that settles it. It should be returned to the farm that produced it—first, in order that the pigs and chickens should use it; and second, because such products should not be considered marketable; and the return should have a corrective influence on the man who produced it and I believe it usually does. Of course, there may be times when milk may be wholesome and yet not fit for market—I refer to milk that may be tainted with garlic. Such milk may be returned to the farm and used by the farmer who may not mind it. It is unfortunate that when milk sours it is usually in such condition that the separation of fats is practically impossible; otherwise it could be used for butter or cottage cheese. Generally speaking, however, milk that is unsuitable for market purposes is hard to utilize for any other purpose.

SANITARY AND PUBLIC HEALTH EDUCATION.

**ORGANIZATION AGAINST THE FLY MENACE—Major William
C. Miller, Chief of Public Health Education.**

**HEALTH INSTRUCTION AND THE PUBLIC SCHOOLS—Dr.
John F. Finegan, State Superintendent of Public Instruction.**



ORGANIZATION AGAINST THE FLY MENACE.

Major Wm. C. Miller, Chief, Division of Public Sanitary Education.

The mission of the Division of Public Sanitary Education is to get before the people, in assimilable form, propaganda on hygiene, sanitation and preventive medicine; to aid local organizations in carrying out their programs for the betterment of sanitary conditions; to form new organizations for the promotion of health work and to keep in touch with all such movements under way. These things are accomplished by means of literature, lectures, exhibits, lantern slides, motion pictures and personal contact.

This division is at present concentrating upon a state-wide warfare against the house fly.

An intensive campaign is being waged in Harrisburg and the methods employed in that city would be applicable to any other municipality.

The campaign was initiated at a public meeting called for the promotion of the health and sanitation interest of Harrisburg. At this assemblage various organized societies made themselves responsible for the accomplishment of different lines of health endeavor. The elimination of the house fly was taken over by the Civic Club, an organization composed of several hundred women. Acting in co-operation with the State and City Health Departments they began their work by making a survey of the potential fly breeding places of Harrisburg.

It was found that there were less than five hundred horses, quartered in about two hundred stables within the city limits. The ordinances of the city already provided that all manure should be stored in waterproof, fly tight bins and be removed at least once a week, and that garbage be kept in fly tight cans and be removed twice weekly. The city was districted and inspectors were assigned to the several zones. Stable owners who failed to comply with the ordinances were notified and, if upon re-inspection a week later, conditions were found to be unimproved, they were prosecuted. A couple of prosecutions, followed by fines rendered the work of the inspectors much easier.

Borax in large quantities was provided by the city and distributed free to owners of stables. A circular accompanying each package of borax explained that from ten to fourteen days were required for the hatching of flies. That, therefore, the removal of manure twice weekly was the chief factor in their elimination; that borax was destructive to fly eggs and larvae and when used in no greater proportion than one pound to sixteen bushels of manure, it did not detract from the fertilizing properties of the latter. It was advised that borax, either dry or in solution (one pound to three gallons of water), be sprinkled over stable floors after cleaning, and upon manure heaps. Every available means to attract attention and promote interest in the fly campaign was made use of.

The public press, as always, did its full share.

The public schools were organized in systematic manner; the directing head being the City Superintendent, the working force the school

children, who in squads, assigned each to its special district, patrolled the city, distributing literature, making and baiting fly traps, swatting flies and reporting exposed fruit stands and fly breeding conditions, through their organization to the Civic Club.

In order to insure success in a fly campaign a constant warfare against adult flies must be maintained. The Boy Scouts volunteered to make fly traps. Day after day they could be seen on the Public Square in Harrisburg, busily engaged at this work. The wire netting and lumber for the fly traps had been contributed by well disposed citizens.

In addition to the home-made traps the Chamber of Commerce, upon the recommendation of the Civic Club, contributed 200 wire fly traps, 20 inches in height. All traps were distributed in places where they were likely to be of most service. Each person receiving a trap was instructed as to the necessity of keeping it properly baited. When traps were delivered, recipients were given the opportunity to pay for them in such sums as they chose. All moneys thus collected were turned over to the City Fly Campaign Fund.

One business firm contributed 20,000 swatters, which were distributed to every household in the city. Each swatter was accompanied by a circular from the State Department of Health, setting forth the dangers of the house fly and the necessity for its destruction.

An organization of girls was formed, to find out every baby living in a home unprotected by screens and to deliver screening, furnished by the Chamber of Commerce, to all such homes unable to provide it for themselves.

These girls also instructed mothers in the manner of making kiddie coops (screened boxes) in which babies may be made comfortable and safe during the summer months. They also distributed sticky fly paper, furnished by the Chamber of Commerce.

The Civic Club is continuing the practice, instituted several year ago, of conducting a fly catching contest. At stated intervals their representatives sit at central places and pay a fixed sum, five cents a quart or some such amount, for all dead flies brought to them and award a special prize to the person bringing the largest amount. It is quite satisfactory to be able to state that owing to the fly campaign in Harrisburg, the number of dead flies paid for this year has been far less than ever before.

The methods just described, while quite capable of application in a city or town, would not be at all suitable for rural districts. Here, in addition to large accumulations of manure, comes the question of the privy vault. With a little care and just a little extra trouble the fly incidence may be reduced to a minimum even on the farm.

All ports of entry and ventilating ports of privies should be screened. The holes in the seats should be covered with accurately fitting, fly tight, hinged lids, so adjusted that they cannot quite be raised to a right angle. This insures their dropping into place and guards against their being left uncovered through carelessness. The vault should be screened and darkened so that not a single ray of light may penetrate. A box of lime should be kept in the privy and every day a couple of shovelfuls should be dumped into the vault.

The privy being properly protected, the next care is the barn yard. The interior of the manure heap generates a degree of heat sufficient to destroy fly eggs and larvae in a very short time.

Flies frequently deposit their eggs in manure before it has left the stable. If an excavation be made in the center of the heap and the fresh manure from the stable be packed in this cavity and then covered with old manure to the depth of about a foot, the heat generated will be sufficient to destroy all eggs and larvae which may have been present in the fresh manure and by the following day the new addition will have attained the same degree of heat as the surrounding manure. Fly eggs and larvae on the surface of manure heaps, may be destroyed by daily turning over the manure so that the surface parts may come in contact with the extra-heated portion at the interior of the heap.

Taking advantage of the knowledge that after five or six days of life in the manure heap, the larva burrows its way into the ground to undergo the pupal state, a larval trap has been devised which has proved very effective. A slatted platform, supported by legs about a foot high, is placed over a concrete basin about three inches deep, which is filled with water. The manure is thrown upon this platform and when the larva migrate downward they drop into the water and are destroyed. The basin must be emptied twice weekly as a safeguard against the breeding of mosquitoes. A platform measuring 8x10 feet is sufficient for the accumulated manure from two horses during the fly breeding season.

Stable floors may be rendered water tight by running melted tar asphaltum into the cracks between the boards.

Borax should be used on the farm as in the city. As the close of the fly season is approaching it becomes more and more important that manure bins be kept clean and that all other sources of fly breeding be looked after. The flies which survive winter are very few and the most important seasons of a fly campaign are the late fall and early spring: In the fall you endeavor to destroy the last remaining flies and in the early spring you strive to kill the earliest arrival. The flies which survive the winter are the ones which hibernate under boards and in crannies of old stables and garages and the pupae which remain in the earth throughout the winter, to develop into flies the following spring.

By far the greater number of flies survive in the pupal state. Therefore, if care be taken to keep the stables clean and the manure bins emptied in the late fall, and after each removal of manure to pour a solution of borax over the stable floors and the floors of manure bins, the chances are that all larvae and eggs present will be destroyed. If this practice be carried out generally, you will start the fly campaign next summer with as much advantage over the fly as the fly had over you this summer.

HEALTH INSTRUCTION AND THE PUBLIC SCHOOLS.

By Dr. John F. Finegan, State Superintendent of Public Instruction.

Colonel Martin, ladies and gentlemen: It is a great pleasure for me to come down here and look over this plant, but it is a greater pleasure to see so many of the health workers of the State gathered here in this summer camp.

One of the great problems in America is the health of the people. It makes no difference in what State you are located—New York, Pennsylvania, or any other State in the Union—we have this great health problem. You know that in schools in many states throughout the country we have what is called Medical Inspection. We have been giving instruction in what is known as physiology and hygiene. We have been making a catalogue in all the school houses; we have been counting up the number of defective children; and that is about all we have done along the line of health instruction and health improvement; and we shall never in this world accomplish anything, either for the State or the nation in the line of health instruction, until we attack it from an entirely different standpoint.

I was asked a couple of years ago to make an address on one phase of health instruction. In my investigation preparatory to that, I discovered this:—I would like to have you doctors and nurses do exactly what I did, go to some library and pull down the report of the Secretary of War for the year immediately preceding the year when this country entered the great war, and then ascertain the great number of young men who wanted to enlist in the army—men who believed they were in fit physical condition—and who offered their services and who went up for the three examinations which the Government required. I am not able to give you the figures exactly to-night, but you will find something like this; that about 130,000 young men of the country endeavored to enlist in the United States Army but by the time they had gotten through with the examinations set by the Government less than one-fifth were accepted for service by the United States Army.

Now I am willing to submit this to any intelligent audience and ask if that is not, in itself, a reflection upon our civilization, a reflection upon our entire school system; that we have not trained the boys and girls in health, as one of the very prime factors and great assets in life.

We shall never get the results which we should have until we begin with the child and in the school. So that I lay down as the first proposition in the health movement that, notwithstanding all which you men do in the homes and what the better homes themselves will do, we are dealing with the great mass of the children of the country; and that when a child enters school it is just as much the obligation of the State, school and teachers, to give him lessons in health as it is to teach the child reading, numbers, or English and that instruction should be given daily just exactly as we give the other instruction.

This instruction should be given through their entire school course; not only during the eight grades of elementary school but through the four years of high school; and when we have children who have gone through twelve years in the public school system—the children

who enter, say, this year and receive that daily instruction twelve years—we shall then be able to turn out a body of boys and girls who will be a credit to civilization and to the community in which they live.

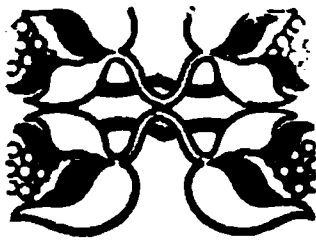
It is just as much an obligation of the country, the obligation of the State, the obligation of those who are charged with the instruction in health of the children, to maintain the same standards of health and health instruction in times of peace as we require of the men in times of war. Every child should look forward to his instruction in health just as much as he does to his instruction in English or in numbers. He should expect it; the home should expect it and should expect the child to have an examination in health in the school just as regularly and efficiently as his examination in English. When they look upon health as of the same importance as any other subject, then we shall be able to get results in teaching the children of the country. It is all right to talk about but what must we do to formulate that instruction? We have the basis of instruction in English; we have a syllabus in English; we have a text book in English.

Now to give health instruction, we must get to that same point. We must have the fundamental principle so reduced and in such simplicity that every teacher knows what he is going to teach every day in the year. The best medical authorities of the country and the best teaching experience combined will have to produce that syllabus.

The next essential thing is teachers. But who is going to teach this health subject? We have schools all through the country for the training of teachers. Why can we not put the very fundamentals that are to be taught in health in the normal school courses? Put health on a par with English. Emphasize it to the same extent, so that the teachers in the schools shall be trained to teach health just as much as they are trained to teach English or any other subject? Now the burden of preparing this syllabus rests upon the medical profession. I told Colonel Martin it was a great relief and a great pleasure to know of his interest in the subject and the very efficient force he has associated with him, and it is very gratifying to me to come here today and see so many men and women representing every section of this State who can be a mighty power in bringing about this change.

Now we are going to undertake it in the State of Pennsylvania. I am going to put the burden on Colonel Martin to lay down before me a course of instruction which shall be workable in the public school system; and that is no easy task. I know that the Colonel is equal to it but we are going to give him something big to do this time and he will need your assistance.

When he has produced his syllabus and it has had such criticism as the most eminent authorities of the country can furnish us, we want to incorporate it right into our courses in physiology and hygiene. Not the kind of instruction you and I had in school. In the place of physiology and hygiene, in the place of that dead matter which has been taught for years in the schools let us take up the subject of health and emphasize it everywhere because it is one of the great, vital things which we must put into the souls of the boys and girls of the State and country. I am glad that I am to have the co-operation of such a body of men and women as I see here today.



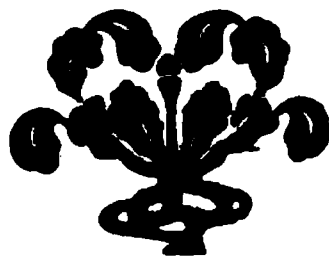
**SCHOOLS. HYGIENE, SANITATION, INSPECTIONS AND
ORAL HYGIENE.**

SCHOOL HYGIENE (Discussion)—Captain George K. Strode, Chief
of Division of School Medical Inspection.

THE SANITARY INSPECTION OF SCHOOL BUILDINGS—John
G. Ziegler, Supervisor of School Sanitation.

OPEN DISCUSSION OF SCHOOL MEDICAL INSPECTION—Con-
ducted by Mr. John Ziegler, Supervisor of School Sanitation.

ORAL HYGIENE (Discussion)—Dr. A. C. Fones, Oral Hygienist to
Public Schools, Bridgeport, Conn.



SCHOOL HYGIENE.

Captain George Strode, Chief of Division of School Medical Inspection.

The purpose of this discourse is to place before the field representatives of this Department some conception of the aims and ideals of the Division of School Hygiene. The importance of School Hygiene has been greatly emphasized by certain facts which have been established by the Surgeon General's Office of the U. S. Army; statistics from our own Department still further emphasize the importance of this subject. Army statistics show that over 30 per cent. of the 3,800,000 draftees were rejected because physically unfit to withstand the strain of military life.

The causes of rejection were due to defects which were of a similar nature to defects which we have found in our medical examination of school children. Not only are the defects similar, but the percentages are very much the same. On the face of it there seems to be a relationship between those defects found in school life and those found in the draftees for the army.

We may assume that the defects are the same. Too short a time has elapsed between the end of the school career and the time of the appearance before draft boards to account for the development of these defects. They are not defects that could be developed in a few months.

One of the results of school medical inspection must be the correction of physical defects of the coming generation. Children must be fitted physically to withstand the stress of mature life, be it on the battle-field, the pathways of commerce or the factories of industry.

The school problem may be divided into the urban and the rural. At the present time the urban is being fairly well handled in a number of communities, but in rural districts it is universally far from satisfactory. The lack of hospital and dispensary facilities, the lack of continuous medical inspection and of school nurses, coupled with inadequate and poorly directed teaching of hygiene and physical training, are the salient reasons why the rural problem is not only the most difficult, but also the most pressing.

An idea of the magnitude of the work which this Department has to do may be grasped from the following figures.

There are about 20,000 schools, housing almost a half million school children, all located in the fourth-class school districts of this Commonwealth. Former inspections have shown that 60 per cent. of these pupils suffer from defective teeth; 25 per cent. from defective tonsils; 18 per cent from defective vision, and smaller percentages from many other of the common abnormalities. In 1917, 24 per cent. of the defectives received treatment and 92 per cent. of these were benefited.

Our problem concerns the other 76 per cent. of defectives who do not receive treatment. The solution surely lies in an efficient "follow up." We will aim to put a personality back of our paper and ink

system, and for this purpose we will make limited use of our State nurses. The use will be limited because the number of these nurses is very limited. Our object is to demonstrate the feasibility of their use in the rural community as it has been demonstrated in the urban communities.

A few additional problems should be discussed because of their importance and the fact that they will be featured during the coming year:

1. Height and weight records. Every child in the fourth-class districts is to be measured this coming fall and where scales can be procured he will also be weighed. It will be our aim to insist upon school directors procuring for their schools a good pair of scales, so that monthly weight records may be made for every child in the school. These records will be made use of to detect under-nourished children and parents will be notified concerning this matter. As a direct corollary to weighing, the subject of diet and clothing will be taken up in the school-room and where local coöperation can be obtained, such instruction will be carried into the home.

2. It will be our aim to discover the mentally sub-normal children and to give them a special examination whereby an opinion can be formed as to whether or not they should be educated in special schools, or be referred for institutional care.

3. In the past, medical inspectors have been advised to refrain from all matters involving therapeutics. This custom will be altered to a degree in the coming year. All cases of head lice are to be excluded from school at once and the notice of exclusion will contain upon it instructions for proper treatment of the condition. The parent by following out these directions may rid the child of the lice and get it back to school with but two or three days absence.

4. Vaccination must be enforced and the amended law which has just been passed is practically free from loop-holes, thus facilitating the work of those who must enforce this law. The Department insists that this preventative procedure shall be carried out as prescribed in our rules and regulations and is ready to back up our local representatives in any difficulties which they may encounter.

5. For the purpose of "follow up" work a card, Form 92, has been devised. This card has one side devoted to the child's physical record and the other side to his scholastic record. Space is provided for each year of the child's school career. One card, only, is required for each pupil. The form follows the pupil from grade to grade and from school to school. The new teacher by reviewing this card knows at once the past events in the child's physical and scholastic life. The school nurse will also find the cards of much service. Form 92 contains a record of the communicable diseases which each pupil has had and this information becomes very useful in the presence of a threatened epidemic.

Assuming measles to be prevalent in a community and that the record cards show that thirty of the forty pupils in a school have had the disease, the attention of school nurse or teacher will be focused on the ten presumably susceptible. This reduces their attention to one-quarter of the pupils and proportionally raises the likelihood of discovering early cases and excluding them from school.

DISCUSSION.

The question has been raised as to whether you should strip children to examine the chest for tuberculosis and allied conditions. At the present time, I should say that it is impractical in our rural districts. If you can screen the child to do your work you can take off the upper garments, but I would rather advise against the stripping of the chest for examination. I do not believe the communities are ready for it. All of us appreciate that there is only one way to examine the chest, and that is to have it stripped. I feel that while we may miss some of our chest conditions under our present method of examining, we will only be stirring up antagonism in parents and little children if we use more radical methods at the present time.

Dr. NEUFELD. I would like to say that we have in Chester County some intelligent communities, and I have been asked on a number of occasions to address mothers' meetings in regard to the medical inspection of schools. I find that by this method we get good results in cleaning up the defects found during the inspection. Many parents do not know what this inspection means, and I think if we tell them of its value we will have their coöperation and will get better results.

Dr. BUTZ. I think that if we met with the school directors and teachers at their county institute, and as County Medical Inspectors told them what the inspection means and what is expected of the teachers, we would have less trouble.

Dr. MINER. Q. Would it not be better to have meetings of school medical inspectors to run over the problems of school inspection?

A. It has been planned to have a day for a conference of our school inspectors, these meetings to be held in several different parts of the State—probably Wilkes-Barre, Reading, Johnstown, and Oil City. There we would canvass the entire subject of school medical inspection, including the proper filling out of the blanks. At that meeting we would have the County Superintendent of Schools and the school principals; thereby making the school authorities familiar with our tests. We also hope to get in touch with the Teachers' Institutes and send one of our representatives there to instruct the teachers in regard to the control of communicable diseases and also in regard to her duties in connection with school inspection and school hygiene.

THE SANITARY INSPECTION OF SCHOOL BUILDINGS.

By John G. Ziegler, Supervisor of School Sanitation.

The purpose of the annual sanitary inspection of school buildings and grounds by the medical inspectors of schools, as provided for by the framers of our School Code and conducted by this Department, is not merely to get a record of conditions or to gather statistics. The main purpose of this inspection is to secure the improvement of existing conditions in order to make every school building in the Commonwealth as sanitary and wholesome in all essential particulars as the best home in the community and further to make it pleasing and attractive in appearance, in furnishings, and in surroundings; so that the community as a whole may be proud of it; and that pupils and teacher may take pleasure in attending school.

The public school building should be the citadel of the public's health. It is the one agency of government which directly and continuously touches the life of all the people. As such the schools should be the exemplification of the State's regard for its children and a model in sanitation for the guidance of the community. The average school building is neither. Where sanitation should be highest, it is lowest; where health should be protected, disease is often spread. There are, of course, many sanitary school buildings and the number is steadily increasing but these still remain the exception rather than the rule.

There are ten thousand one-room rural school buildings in the fourth-class school districts of the Commonwealth. Fully 90 per cent. of these are of the box car type with two or three windows on each side, with no provision for ventilation and no decent toilet facilities. The school building of this type is often situated on the side of a hill or among a clump of trees so shading the windows as to shut out even much of the light that the poorly placed windows might admit. The room itself is low pitched, with gloomy, dingy walls; the benches or seats are not adjustable. Although usually of graded or assorted sizes it is very unusual to find the seating of pupils arranged according to the sizes of the seats—in fact, this is often impossible.

In winter the windows are tightly closed to keep out the cold and the air soon becomes foul: the children are cramped in their seats, their eyes are strained in the dim light, their minds are made sluggish by the heat and lack of ventilation. This continues through the long months of a winter's session and it is no wonder that the return of spring finds ruddy faces pale, keen eyes dimmed, vitality lowered, and health sometimes irreparably damaged.

Such conditions certainly have aggravated the defects of the children in our public schools and must be blamed for the development, during the session, of many physical ills among children who were well when they entered school. They are, in a large measure, responsible for the conditions shown by our statistics, viz: that there are more physical defects found among the children of the rural population than there are among the school children of the cities and

larger towns. To state the fact bluntly—the Commonwealth and the school district, which look to the public school for the training of good citizens, have rather weakened these children and prevented their development by placing them in unhealthful buildings amid insanitary surroundings. The blame cannot be put elsewhere.

The question of ventilation and the proper humidifying of the school room air is of the first importance, but generally receives very slight attention in the smaller school buildings. Even, in a large number of cases, buildings costing thousands of dollars, equipped with first-class apparatus and apparently modern systems of ventilation, have absolutely no provision for supplying moisture to the heated air. In 52 per cent. of the buildings inspected during the last school year, children have been continually compelled to inhale dry, baked air. Our medical inspectors should give special attention to this point in every school room they visit and should give definite instructions to the teachers and the principal in reference to having water pans placed on the radiators and stoves or furnaces.

There seems to be a popular belief that buildings heated with steam heat do not require this provision. This fallacy should be refuted. It is just as necessary to supply moisture to the heated air coming from the air chambers of an indirect steam heating system or from an indirect hot air furnace, as it is to have that same provision on the ordinary stove or ventilating heater in a one-room school building. The diagrams of different heating systems on display here show the proper position for such vapor pans or water tanks.

In recent years a great deal of stress has been laid upon the open air school for children threatened with tuberculosis, and a large amount of good has certainly been done through the establishing of such schools. But while school authorities seem ready to admit the value of open air schools for children already threatened with tuberculosis, they do not appear to realize that it is of vastly more importance to provide school accommodations properly ventilated and with heated air properly humidified for the thousands of children now apparently vigorous, in order that they may not be made subjects for the open air school. "Every school room in the Commonwealth a fresh air school" should be the slogan of our medical inspectors from the Delaware to the Ohio. We want this doctrine preached in every school of the State and will ask our inspectors to insist that every teacher shall throw open, for the admission of outside air, all school room windows for a period of five minutes three times each school day. Physical exercises or drills should be conducted during these periods and after school hours every room should be thoroughly aired for a period of fifteen minutes each day.

Nor do we wish to stop at the school room. This gospel of fresh air is to be carried through the medium of the school into every home; therefore, our inspectors will be requested to include in their talks to the schools special reference to the importance of ventilation of the home and of sleeping rooms in particular. The new notices for parents of children found defective will contain this teaching—"Make health while the moon shines; sleep with your bed-room windows open."

An abundance of properly distributed light is probably of next importance. Approximately 50 per cent. or more of the school rooms of our State have less than the legal requirement of glass area.

About 8½ per cent. of the school rooms have a light area equal to less than 10 per cent. of the floor surface. In order to remedy this evil, reconstruction of the buildings is required in the majority of the cases and various local conditions such as available funds, possible consolidation etc., must be taken into consideration, so that the improvement of this condition will of necessity take some time. However, conditions can, in a large measure, be temporarily improved if the inspector will be careful to give on his sanitary survey blank a full and clear report of conditions. For in addition to the deficiency in window space or glass area, it often happens that the walls are dark and that window shades of a dark color are in use, and these instead of being rolled up to their full extent when the sun does not strike the window are generally about one-third or half drawn.

The inspector on coming into such a room should at once give attention to the window shades and run them up to the full extent, admitting all possible light. If the shades are not provided with proper strings or cords the teacher should be instructed to provide such cords fastened to the bottom of the shades. The requirements of the department are that only light weight translucent shades of buff color shall be in use. These shades should have the rollers fastened at the base of the window instead of at the top and should draw upward by means of a cord and pulley.

The discarding of dark green shades fastened at the top of the window and the installing of shades of the type here described will add from 30 to 50 per cent. to the lighting efficiency of such school rooms. Shades operating upward from the base of the window, even when half way or two-thirds drawn, will admit light at the point where it is best available for distribution throughout the room; namely, at the top of the window. A square foot of light admitted near the ceiling of a room is worth as much as four square feet admitted at the bottom of the window. Painting the school room walls a light green-gray, or a very light tint of green with white or cream ceiling, will considerably aid the diffusion of light.

The inspector should satisfy himself that a safe water supply is provided at each school building, and that the supply of drinking water kept in the building is properly protected. The open bucket and dipper must no longer be tolerated in any building. Individual drinking cups kept in a closed case should be provided, or wherever public water supplies are available bubbling fountains should be installed.

Decent and sanitary toilets should be provided for all schools. The porcelain flush closet or porcelain lined range closets with automatic flush are the only closets to be recommended for any school building having a public or piped water supply system available.

The inside chemical closet has lately been put into use in a number of rural schools. These closets, if vent pipes of sufficient size are properly connected with closet and underground tank and proper precautions are used in frequently cleansing closet bowl, overcome some of the disadvantages of the outside privy, but there is always a grave possibility of their neglect and thus they may become a menace in a school building. Such toilets, if installed, should never directly connect with any school or class room. Entrance thereto should be by means of a separate passage or vestibule and they should be so placed that this vestibule or the toilet room proper may have free and continuous ventilation directly from outside the building.

For a large majority of rural schools, however, the ordinary privy or out-house is probably the safest toilet solution. The entrances to these toilets should be properly screened as required by law and should be provided with watertight concrete vaults easily accessible from the rear for frequent cleaning. Dry slaked lime should be kept on hand and sprinkled over contents daily throughout the school term. Toilet doors should be provided with locks and the toilets should be kept under lock and key during the hours when the school is not in session.

The improvement of the adverse conditions that are disclosed by our inspections is largely a matter of education and securing the coöperation of the School Board. The majority of School Boards are willing to improve conditions if shown a feasible method of doing so and if a healthy community sentiment is created in favor of better school conditions for the children. A community should be made to realize that healthful and attractive rural schools are absolutely essential to the physical, mental, social, economic, and moral well-being of the children themselves and to the life and welfare of the community and the Nation.

Country school children should have as sanitary and attractive schools and as intelligent and effective health care as school children in the cities. Our farmers must learn that the selling price of their farm land bears a direct ratio to the value and worth of their school plants and roads. Poor roads and neglected run-down school houses mean deserted farms and a dwindling population. You may find concrete illustrations of this truth in practically every county of this Commonwealth. Securing coöperation to attain a desired improvement is better than coercion. Of course, there are cases in which a School Board is guilty of continued and willful neglect and perhaps actual defiance of the law, when coercion is the only course to be taken. In such a case the Department will not hesitate to act.

Instructions for necessary improvements or alterations must always come directly from the Department. The inspector should not give any instructions for alterations without first having submitted them to the Department. This is necessary. Otherwise there would be too many diversified plans given out by the various inspectors. The method employed by the Department is to review the sanitary reports of all the buildings in a district, pick out the most glaring defects in the various buildings and write a letter to the Secretary of the School Board, requesting certain improvements before the opening of the next term.

These letters usually go out in the spring of the year even though the inspections may have been made in the fall. This is for the reason that any instructions requiring alterations in buildings or construction work can hardly be undertaken during the school session and the School Boards take up these matters during the vacation period. At the same time a copy of the letter to each School Board in a county is mailed to the County Superintendent of Schools and his coöperation asked in securing the necessary improvements.

In all cases where serious defects were found the Department asks a report from the School Board, giving the action taken for the improvement of the conditions mentioned. In the past years it has not been possible to follow up this work as closely as we would like to, but we feel that in the next year or two we shall be able to make a closer follow-up from the central office.

In cases requiring immediate attention a special letter is mailed to the Board of Directors immediately upon receipt of report. A record of all letters is kept and if satisfactory replies are not received within reasonable time they are followed up.

You will readily understand the importance of having reports accurate in every detail, in order that the Department may be able to form a complete mental picture of the conditions of each building, and thus make definite requests and give definite suggestions for improvement of conditions; and to insist upon their fulfillment on the part of the Boards of School Directors.

To those of you who have been engaged in the actual work of school inspection in the past years some of the items on the reports may have seemed of minor importance, but you must remember that a condition that appears perfectly clear to you after viewing the building may not be clear to the person who reviews the report in the central office unless all the required details in reference to the building and its surroundings are noted.

We would, therefore, have you impress upon every school inspector the importance of carefully noting every detail applicable to a building, as required on the Sanitary Survey blank. Questions not applying to a certain building should be answered with a dash.

(Diagrams of different heating and ventilating systems have been placed on display in the children's building and will be explained there.)

OPEN DISCUSSION ON SCHOOL MEDICAL INSPECTION.

Conducted by John Ziegler, Supervisor of School Sanitation.

Q.—What is to be done with a child showing definite symptoms of tuberculosis while attending a public, private, or parochial school?

A.—You are instructed in our pamphlet to take samples of the sputum of such child and forward it to the laboratory. If upon analysis positive evidence of tuberculosis is found the law requires exclusion of that child from school.

Q.—Do we have the right to remove the clothing from the chest of a child to make an examination?

A.—I do not think that would be advisable at the present time unless you have a private room in which you can make the examination, and then I do not know whether people in general are educated to that point. If work has been done through the Parent-Teachers Association and if people are well educated in general to see the importance of medical inspection, it might be all right, but I do not believe it would be well to practice this generally through the rural districts.

Q.—Suppose a child has been excluded from school on account of tuberculosis; the truant officer receives notice that that child is not attending school and goes after him—what can we do in a case of that kind?

A.—The truant officer has no right to go after any child that has been excluded from school on account of a contagious disease or an infectious disease. The notice of exclusion should take care of that. The new blanks will contain a space for you to show whether a child is to be excluded from school by your order. We have not known heretofore whether you have carried out the instructions of the department in this regard unless you stated it under remarks. This applies to the unvaccinated child and we want to know if you have ordered the teacher to exclude the child.

Q.—Who is the judge of a successful vaccination, the school inspector or the family physician?

A.—The new law provides that there must be a subsequent examination of a vaccination sore after the vaccination has been performed, and further states that no certificate shall be issued other than one issued according to the restrictions of the rules and regulations of the Commissioner of Health approved by the Advisory Board.

Q.—In the case of an unsuccessful vaccination?

A.—The rule we have drawn up is this: if a child has been twice unsuccessfully vaccinated within a period of three months, the third attempt shall be made by the county medical inspector and we are preparing a special certificate for the County Medical Inspector to use when he makes that third attempt. The County Medical Inspector is permitted to issue this certificate on the days he makes the examination, and this certificate is good for one year but after that time there must be a re-vaccination. That is the rule we propose presenting to the Advisory Board. No teacher has a right to admit a pupil to school unless it has been successfully vaccinated or has one of these certificates from the County Medical Inspector.

Q.—What would you do with a case of venereal disease in a school. We have a deplorable condition in our township now, where a girl was compelled to go to school although it is known that she has a venereal disease. The children all know that this girl is infected with gonorrhea and will not sit near her, yet she is let go freely through the town and infect young boys. The directors say they are powerless to prevent this girl attending school.

A.—(Dr. Strode). If that condition faced me I would not permit that child to go to school. She has a communicable disease and is endangering the health of the other pupils. Under the broad general powers of the Health Department we have the right to control any communicable disease and I am sure the department would be back of any man in the field who handled a case of this kind in this way.

(Following this discussion Mr. Ziegler explained certain new forms which are to be used by medical inspectors this year.)

ORAL HYGIENE.

Dr. A. C. Fones, Director of Dental Department, Bridgeport, Connecticut Board of Health.

(Abstract.)

I feel that my audience to-day is one that has an appreciation of the dangers of focal infections and also what may take place from secondary infections; from the toxins in the mouth and from the infections around the roots of the teeth due to insanitary conditions.

The pathologic side I will pass by. The thing that I feel you would be most interested in is, how this problem may be handled for the benefit of the citizens of Pennsylvania, as we are handling it in Connecticut for the benefit of the citizens of Bridgeport.

Some four years previous to 1913 I spent a great deal of my time trying to get an appropriation of \$5,000 to make a demonstration in our public school system of what could be done by dental hygiene in the schools. They finally gave us this sum to start the work. Some twenty years ago I became interested in the work of Dr. Smith of Philadelphia, who started out on a mouth hygiene campaign and, I believe, was one of the leaders in the campaign in Pennsylvania. From his enthusiasm I imbibed a great deal and established my own practice to demonstrate that we could eliminate 80 per cent. of the dental caries in children by a system of prophylaxis. I taught my assistant in the office how to do the smaller things, such as cleansing and polishing the teeth, and every patient came back about every two months for attention. I felt we could do a great deal more with the children in the public schools if we had an opportunity.

With the \$5,000 given us I established a course in my office for oral hygienists and had some leaders along educational lines give lectures to these women. After this course was completed we were able to enter the schools with what we called a corps of dental hygienists. The first year we took care of about 8,000 children. The next year we had to have a larger appropriation and we increased our corps of workers to fourteen. We needed more money the following year and they gave us \$15,000, and the next year over \$21,000. A year ago the parochial schools asked to have the system extended to them and their request was complied with; then they gave us \$31,000. This last year in order that we may take care of 30,000 children they have given us \$37,000. I have brought with me a report of five years work in Bridgeport because I thought it might be interesting to you to know just what have been the results of this campaign and the methods which were employed.

We can never wipe out dental caries by dental clinics. This preventive and educational clinic which we have is for every child, rich and poor, and every child is submitted to the same examination. If the parents object and want to have the work done by their own dentists we do not object, but it must be done by the dentist or the dental hygienist will do it.

Pennsylvania has been somewhat behind other states in passing a section of the dental law which will permit of the education of these hygienists; I believe the large colleges here would be glad to establish the course for hygienists if the dental law permitted it. Twelve or thirteen states have all passed sections in their dental laws permitting courses of this kind to be established.

The first thing necessary in this work will be to have a group of women trained to go into the schools and teach the children the value of properly taking care of their teeth. Dentistry has to come out of its shell and be put on a more scientific basis; we cannot continue to practice dentistry merely as a reparative and curative profession. It must be made a preventive profession as well. A toothache in a child is a catastrophe and it is up to the medical men and school inspectors to educate the public to an understanding of this fact and it is up to the medical men and the school inspectors to see that the work of prophylaxis is carried into the public schools.

"Let us examine the average boy of ten years of age and see what we find. Face, ears and nose unclean, hair unkempt, hands grimy and finger-nails dirty. Shoes splashed with dry or wet mud, clothes soiled, and an odor percolating through the atmosphere to excite suspicion that his little body has not been washed for some time. His eyesight may be good and yet it may be defective. If his face is washed it may disclose a color that is lacking in the bloom that a boy of ten should have.

"If otherwise his body appears normal we ask him to open his mouth. If his external appearance troubles us, his internal appearance would shock us. Here we find teeth covered with green stain; temporary and permanent teeth badly decayed, possibly fistulas on the gum surface showing an outlet for pus from an abscessed tooth or teeth, and decomposing food around and between the teeth. Why examine the child any further? Here at the gateway of the system is a source of infection and poison that would contaminate every mouthful of food taken into his body. With decomposition instead of digestion taking place in the alimentary tract, it is no wonder that the child suffers from an auto-intoxication which produces eye-strain, anaemia, malaise, constipation, headaches, fevers and many other ailments.

"Such a mouth is an ideal breeding ground for germ life, and a child with such a mouth is far more susceptible to infectious diseases than one whose teeth are sound and kept free from food debris. Suppose at the entrance of our cities such a rank condition existed. How long would it be before disease and sickness would be swept in among the inhabitants? This boy described is but duplicated in the girl of ten. Decayed teeth constitute the most prevalent disease known. It is difficult to find two children out one hundred with perfectly sound sets of teeth. In a thorough dental examination of five hundred and fifty school children in the town of Stratford, Connecticut, but one child was found to have a set of teeth free from decay.

"Look over the reports of the medical inspectors in the public schools who have made but a glancing examination of the mouths, and you will find that decayed teeth outrank all other physical defects combined.

"Therefore we must deduce from our analysis of school hygiene that the most conspicuous defect of the child is the unsanitary con-

dition of his mouth. Like a pig pen or garbage drain, slowly seeping its poison into the brook, which, flowing into the reservoir, contaminates the water supply to a city, so do the products of abscessed and decayed teeth with decomposing food slowly but surely poison the human system. Such mouths and teeth breed disease. Such children cough and sneeze millions of germs made virulent and active in an ideal feeding ground. And then again the teeth as a crushing and masticating machine are frequently ruined by the time the child has reached twelve or fourteen years of age. It is true that they can limp through life with this dreadful handicap, just as an automobile can climb a steep hill on three cylinders, but you can rest assured that the child with a wrecked mouth at fourteen is traveling on his second speed until he reaches thirty-five, and from there he drops into his low gear to finish the journey in a slow and uncertain state. It is true that many have lived to a ripe old age with unclean mouths and wrecked teeth, not on account of such conditions, but in spite of them.

"If it be conceded that the most unhygienic feature of child life is the mouth, we then come to the problem—how can we establish clean mouths, sound teeth and the tooth-brush habit? To try and fill the teeth of the children in our public schools is a noble charity, but an endless chain. Like an immense flood, decayed teeth have spread over the civilized world to such an extent that hardly one-tenth of the population of a country such as ours could find a sufficient number of dentists to fill its teeth.

"But let us assume that it is possible to fill these teeth and save them for the time being;—how are we to prevent a re-occurrence of decay as well as to check the flood with the children coming into the schools in the primary grades each year? Surely every dentist knows that the tooth brush alone will not stop it, and every dentist also knows, as well as the parent, how difficult it is to induce children to properly brush their teeth and take care of their mouths as they should. Would it not be better to evolve a system for the prevention of dental decay and the establishment of clean mouths than try to cope with the hopeless task of filling the thousands of decayed teeth? I am heartily in sympathy with the scheme that every city should have a dental clinic for the school children, for the relief of pain, and I believe it is inhuman in this twentieth century to allow the poorer class of children to suffer as they do from toothache. I would present this plan, partly suggested by Dr. Ottolengui, of New York, for your consideration.

"Suppose it were possible to start a year from this September and place in our schools trained women who would confine their efforts the first year to the children in the first grade. These women to be trained and educated as hygienists who would be competent to give each child a surface treatment of the teeth once a month; each woman to have the supervision, to start with, of two hundred children; these children in the first grade to be taught the proper use of the tooth brush; mouths inspected daily for cleanliness, and no child permitted to enter the class room who had not brushed his teeth. These hygienists could also be of great aid to the medical inspectors. At the end of the year they would follow the children into the second grade and a new corps of hygienists would enter the first grade with the new pupils; this to be repeated for five years, until the first corps of women were caring for their children in the fifth grade. It is doubtful if it

would be necessary to carry this work beyond the fifth grade, as the child would be cared for through the most susceptible period for dental decay.

"The question may be asked: How are we to educate these women to be dental hygienists? In every large city there are men in both the medical and dental professions who are competent to establish a lecture course for this purpose. The necessary training in the prophylactic treatment of the teeth would, of course, be given by dentists. Both of these professions are anxious to aid in any cause so worthy, and I believe they would willingly give their time and knowledge to start such a movement. It is impossible in this paper to give the details concerning the education of these women and their full duties in the schools, but enough has been stated to permit those in charge of our public school system to consider the proposition in a general way and determine if this plan is a solution of the main problem regarding school hygiene."

It will take a long period of public education before the mouths of the incoming children of our first grade will show any great degree of improvement. From birth to five or six years of age they are entirely under the home influence and are permitted to eat foods, especially sweets, that are conducive to decay, and mouth cleanliness is not compulsory. Slowly but surely the public school education will seep back into the homes, and with the aid of the older children and pamphlets it is our hope that eventually the mouths of these children will present a much improved condition.

In order to prove definitely the value of education and prevention, it was necessary to have data of the condition of the mouths of children in a higher grade who had never had the advantage of prophylactic treatments, tooth-brush drills, and education in mouth hygiene. The children of the fifth grade were chosen as the control class, and this report will present the comparison of their mouth conditions with the present fifth graders, who have had prophylactic treatments and education in mouth hygiene for the first five years of their school life. They have had no repair work provided for them and the educational side has been three-quarters of the work of the dental hygiene corps.

In making this demonstration it was not our expectation to make a startling reduction in the percentage of dental decay, the main object being to show up the pernicious mouth conditions prevailing among school children and to prove the value of prevention and education in mouth hygiene for great numbers of children, in preference to extensive repair clinics, with no effort to eliminate the source of the trouble. It would, of course, have been ideal to have had the two types of clinics and to have put the children's mouths in sound condition, but funds were not available for this purpose, and the excellent report shown is merely the result of education and prevention.

For the purpose of securing this data a complete record chart has been maintained of the condition of every child's mouth at each successive treatment, and the following figures were obtained by comparing the average number of cavities per child in the fifth grade of a given school with the average secured from the same grade of the same school several years ago. The demonstration was conducted in thirty schools and this year twenty thousand individual children received this treatment and education.

DENTAL CARDS.

Following is the percentage of reduction of cavities in the permanent teeth of the fifth graders in these Bridgeport schools:

The highest school showed a reduction of 67.5 per cent.

Five schools were over 75 per cent.

Two schools showed over a 50 per cent. reduction.

Three schools were over 40 per cent.

Three schools were over 30 per cent.

Five schools were over 25 per cent.

Four schools were over 20 per cent.

Five schools were over 15 per cent.

One school was below 10 per cent. and two schools showed a minus record.

The total average for all these schools amounts to 33.9 per cent.

Although the principals and teachers have given splendid co-operation in many of the schools that have low records, they had to contend with a certain number of children whose home influence was not conducive to any interest in mouth hygiene.

We believe that from 70 per cent. to 80 per cent. of dental caries can be eliminated through the public school system by the incorporation in the school curriculum of a definite health program, making hygiene one of the requisities for promotion. This would insure the coöperation and interest of the child, teacher and parent.

The excessive consumption of free sugar is undoubtedly the cause of exceedingly poor teeth among the English, French and American peoples.

It is not hard to imagine that a very large percentage of children are constantly laboring under a handicap of faulty feeding which in turn produces a long line of other handicaps, such as malformed jaws, decayed teeth, under development, malnutrition, etc., while the most normal conditions could be secured by correct diet and cleanliness.

Aside from dental decay, the most noticeable defect in the mouths of the school children is lack of proper relationship between the jaws and teeth, or malocclusion.

When but two per cent. of our school children have regular teeth it adds to the difficulty of eliminating dental decay, since irregular teeth offer the greatest opportunity for the formation of cavities and render the thorough cleansing of the mouth very difficult.

The forms of communicable diseases where mouth hygiene could play an important part for prevention are those which involve the respiratory tract or find ingress to the body through the mucous membrane lining the mouth, throat and nares. The resistance to bacterial invasion may not be determined entirely by the contents of the blood, but by the tone and resistance of the cells of the individual tissues on which the bacteria may lodge temporarily. One bacterium does not produce a disease. It is only when the environment proves favorable for propagation and the production of large numbers that infection occurs.

Any continuous effort that has for its object the removal of dead animal and vegetable matter, such as food debris, from all the surfaces of all the teeth, the stimulating and keeping up of the tone of

the membrane lining the mouth, and the reducing of the number of bacteria in the mouth to a minimum, must act as a powerful preventive by aiding the tonsils, the soft palate, and the pharynx to maintain a normal and healthful condition.

Summary. To summarize: We have found that in schools or districts where little or no attention has been given to mouth hygiene it is difficult to find three children out of a hundred with teeth entirely free from dental caries. We have also found that, owing to this lack of education and enlightenment, not more than ten per cent. of the children were using a tooth brush daily. That malocclusion, which means that the teeth are out of their normal position in the mouth, thus preventing their striking the teeth in opposition, as nature intended they should strike, is as common as dental caries.

That retardations are greatly influenced by the toxic effect produced by numerous bacteria in unclean mouths and in diseased and pulpless teeth.

Although properly tabulated records of the Board of Health do not date back far enough to show facts and figures regarding communicable diseases, yet we have sufficient data which, on close observation, convinced us that mouth hygiene is to be a very powerful factor in the restriction of communicable and infectious diseases in childhood.

(This lecture was continued into the afternoon and motion pictures of the work as it is being carried on in the schools of Bridgeport, Connecticut, were shown.)

DISCUSSION.

Q.—Of what does the equipment consist?

A.—The outfit we used was a portable one, it consisted of a portable dental chair such as we used in the army, a dental engine, a little cabinet, and a small stool. The dental engine was used for the first cleaning, as the teeth were often quite dirty, but after the first cleaning the work was done entirely by a hand polisher. An examination is made of each child's mouth and a daily chart made up and filed. The outfit itself is very simple and can be installed and made ready for use in from fifteen to twenty minutes. We are now having permanent equipment placed in every school so that we do not have to transport it from place to place, and we are also going to have permanent hygienists in the school, so that they become a part of the school and a part of the teaching corps of the school. This takes effect in September of this year.

Q.—How many people make up your traveling clinic?

A.—We have twenty-six hygienists. Thirty-two persons altogether make up the clinic. The children have no fear of dentistry under these methods; if any cavities are found the small children, even in the first and second grades, are perfectly willing to have them filled and their teeth cleaned. A daily examination chart is made regarding cavities, condition of the gums, fistulas, etc., and a complete record is kept of every child's mouth from the time it enters the first grade until it completes the fifth grade, making in all a record covering five years. On the cards which we send to the parents we use the term "dirty," as this seems to have more of an effect and secures better co-operation—apparently they do not like the term applied to the teeth of their children.

Q.—How do you arrange for cleansing and sterilization of your instruments?

A.—We carry always two sets of instruments. When the work in one child's mouth is completed each instrument is taken in a bowl and given a thorough scrubbing with soap and running water, then put in a jar of alcohol and left there thirty minutes. The head rest and seat of the chair are thoroughly scrubbed with ammonia water after each examination.

Q.—What does it cost to conduct one of these portable clinics?

A.—When the work was first started we figured the cost at 80 cents per child; now however this cost has increased to about \$1.40 per child per year. We are taking care of 20,000 children. The hygienists are paid only \$22.00 per week. Some of the teachers have been very helpful and have taken a great deal of interest in the work, others however have been very indifferent and are not inclined to assist the hygienists in any way. The portable outfit may be placed almost anywhere in the school building, on a stair landing, in a small office, or in the corridor. All new schools that are now being built are provided with a clinic room for the use of the medical and dental corps.

These hygienists by polishing the surface of the teeth prevent the formation of bacterial plaques, which if permitted to remain on the teeth for weeks will cause decay. Adults are more immune to dental caries than are children, but they are more susceptible to infection from bacteria around the roots of the teeth or pyorrhea. Proper prophylactic treatment will prevent this infection.

Q.—What do you recommend to the children for cleaning their teeth?

A.—We started out by giving them a tooth powder at cost, which was 10 cents per bottle. Now we are trying to get another supply for them as we can sell from thirty to forty thousand bottles. We also sell them tooth brushes at cost.

Q.—What is the proper method of brushing the gums?

A.—The art of brushing the teeth and gums must be considered from the standpoint of the blood supply to the tissues surrounding the teeth and the forms of the gums themselves. If you brush the gums crosswise so that the bristles play back and forth you will irritate the gums and cause bleeding. Do not push the brush in your mouth and scour the teeth crosswise, brush them up and down with a sort of rotary motion; this causes the brush to pass between the teeth, is better for cleansing purposes, and gives a more stimulating effect. We have advocated a circular motion, this will sweep away the food that may collect under the border of the gums and pushes the gums themselves backward by a gentle natural massage. The festoon of the gum is made of a tough tissue, which becomes tougher and more aggressive by proper brushing, and by brushing in a circular motion we get a natural massage which seems to be most helpful.

Q.—Doesn't the use of the dry brush in the toothbrush drill injure the gums?

A.—No, the use of the dry brush does not hurt the gums or the teeth as it is not in the mouth more than four seconds until it is well moistened, from saliva. The brushes are sterilized and given out to each child. In most drills however, the children bring their

brushes to school and take them home again for washing and hanging up.

Q.—How long does it require to complete a course in dental hygiene?

A.—The course for the hygienists takes about one year, but this also covers general hygiene.

Q.—Do you recommend the use of a brush with straight bristles or one that is shaped?

A.—A brush that has straight bristles is best, with a slight tuft on the end.

Q.—What is the composition of tooth powder?

A.—Tooth powder is a composition of soap and chalk. The mouth needs a gum stimulant and the removal of food debris, anything else besides soap and chalk in tooth powder is introduced merely to give a pleasant taste. Antiseptics do not amount to anything, as the use of anything strong enough to destroy the germs would destroy the mucous membrane.

Q.—Do you prefer a powder to a paste?

A.—Paste is more pleasant, the only difference between the two is that paste contains glycerin and powder does not.

Q.—Is the use of baking soda harmful?

A.—Baking soda is recommended in certain conditions. It should be used where the necks of the teeth are very sensitive.

Q.—Do you recommend the use of a hard or soft bristle brush?

A.—Soft to begin with, then a medium hard brush after the gums have become hardened.

Q.—How do you account for the perfect teeth of the negroes in this country?

A.—The majority of negroes have good teeth, but we find a large number of them susceptible to dental decay, this however occurs in negro children living around candy stores where they are likely to eat a surplus of sugar. Negroes have an inheritance of strong teeth that will take a long time to break down; on the other hand, we have inherited bad teeth and it will take a long time to build up a strong resistance to dental decay.

Q.—What is pyorrhea?

A.—Pyorrhea is almost always a local infection which comes through neglect. Neglect is followed by ingress of food debris to the tissues around the root of the tooth, and it is the decomposition of this food debris that causes pyorrhea.

Q.—Is it curable?

A.—Yes, if it is taken in time it is curable to a very marked degree. This cure however, cannot be effected by a dentist.

Q.—What is the value of emetin in these cases?

A.—Emetin has no value.

Q.—Do animals have better and stronger teeth than human beings?

A.—Yes, if they are given the food they naturally desire.

Q.—Do you advocate the use of an alkaline wash at night?

A.—I advocate the use of calcium, lime water, one-half cup to a quart of water.

Q.—This morning you said something about the importance of giving children solid foods. My opinion is that the average child does not get the proper food necessary to the development of good teeth. they are fed too many mushy foods which require no chewing.

A.—I think you are right to a great degree. The tooth is a permanent tissue and the foods that are high in calcium content, such as turnips, carrots, cabbage, etc., are very essential to child life. When parents realize that children should be fed simple, wholesome foods they will stop giving the foods that require no pressure in chewing and so easily ferment in the mouth and cause dental caries. Cleanliness of the mouth and teeth is the first step, and after that we need education of the parents and children regarding food and diet.

Dr. STRODE. I have been very much impressed by Dr. Fones' talk, as I was impressed by my visit to Bridgeport some weeks ago. I believe we have a big field opened to us in Pennsylvania and as I have said before, it is one of the big things which we have in mind to put across. We have no laws in Pennsylvania which permit us to do prophylactic work. We must put before our legislators, through public opinion, the necessity of changing our laws so that we can get ways and means of doing prophylactic work in the schools. We must do this through our own department. We, as a department, are interested in preventive medicine and our efforts ought to be toward preventive work in mouth hygiene as well as in the other fields in which the department is interested. I want to thank Dr. Fones, and I know all of you back me in this, for coming here and giving this extremely interesting and valuable talk.



CHILD WELFARE AND PUBLIC HEALTH NURSING.

CHILD WELFARE—Dr. Dorothy Child, Chief of Division of Child Hygiene.

THE PUBLIC HEALTH NURSE—Mrs. Bessie Haasis, National Organization for Public Health Nursing.

PUBLIC HEALTH WORK—Mrs. Bessie Haasis, National Organization for Public Health Nursing.

DEPARTMENT WORK FOR NURSES (Quiz Conference)—Miss Alice O'Halloran, Chief Nurse.



CHILD WELFARE.

(Address to Nurses.)

Dr. Dorothy Child, Chief of Division of Child Hygiene.

Under the new plan, child welfare work will be expected of all state nurses. You are naturally anxious to know of what this work consists. This will depend upon your district and its special needs. Your county problems are so different that it will be necessary for you to work them out for your own district. You will be assisted in this by the County Medical Director and state or local authorities and especially by local welfare workers who have been organized for war time activities.

In places where child welfare work is already in operation, become familiar with their activities and take active part on such occasions as drives, baby shows and weighing and measuring contests. Where no baby work has been started, study the situation with great care. Perhaps the most important things to know are the infant mortality rate—(number of deaths of children under one year per thousand living births)—and the findings of the School Medical Inspector.

A high infant mortality rate shows the need of pre-natal instruction for mothers and care of young infants. If the school doctor has found, every year, a large proportion of the children to be pale, under nourished, and suffering from correctable defects, such as, enlarged tonsils and bad teeth, you may assume that the district needs provision made for children of the pre-school age. That is, from two to six years. Supervision of such children is best effected through a health center, where medical and hygienic advice is dispensed. Such centers may be located in our state dispensaries or in school buildings with the coöperation of the local school boards.

The most important part, however, of your child welfare work will be that work done in the homes, where you show the mother how to feed, clothe, bathe and put to bed the very children who need that care, using the very utensils and equipment that the mother must use. It is in the home also that you will be able to do the most effective pre-natal work, for only in privacy will the mother confide her fears and fancies.

What are the most important points about pre-natal care? First, syphilis, the cause by far of the greater number of fatal deaths. Syphilis, if recognized early and treated vigorously and persistently, may be cured. If you can induce a suspected case to come in for examination and the Wassermann test you have taken a big step toward saving the life of the expected baby. Another danger,—and this one all pregnant women have to face,—is that of kidney disease. To avoid this much dreaded complication we instruct the mothers to watch for early symptoms as follows; persistent severe headaches, black spots before the eyes, swelling of the feet and ankles, puffiness of the eyelids and diminished daily amounts of urine. In remote districts far from doctors and hospitals, it may be your duty to take a specimen of urine and examine it for albumen. To do this you take about an inch of freshly voided urine in a test tube and hold it over a small flame,—a candle would do,—until bubbles begin

to form. Sometimes with the heat a white cloud appears, in the urine; the next step in the test is to add three or four drops of diluted acetic acid or vinegar. If there be albumen in the urine a white cloud now forms which is the precipitated protein and may be compared to the white of egg that has been heated and becomes cloudy. If there be no albumen in the urine it will be clear after adding the acid. A doctor should be summoned at once when you suspect kidney complications. Meanwhile the patient should be put to bed and should have a milk diet. Mothers should be instructed concerning suitable diet, clothing, bathing and exercise. Special attention should be given to those who give a history of frequent abortions.

Care of the Baby. The baby that is artificially fed should be under careful observation by a doctor. One task of yours will be to encourage, by every means within your power, breast feeding of all infants. The sole exceptions to this rule are when the mother has any form of tuberculosis or other wasting disease and when she is positive that she is again pregnant. The best time for weaning is the ninth month, though it may be deferred if the ninth month comes in the summer. A syphilitic mother should nurse her child but a syphilitic child should never be put to the breast of a healthy wet nurse.

Interval. Another point for you to emphasize is regularity of feeding, whether from the breast or bottle. No child can stand being fed oftener than every two hours; modern authorities tell us that a three-hour interval is best for most children, from the second day of life to the sixth month, after which a four-hour interval is advised.

Sick Babies. There are three kinds of diarrhoea in babies. First, that from simple indigestion, in which the stools are liquid and the baby does not seem sick. This is most often due to too frequent feeding or else too rich a mixture. The treatment is to remove the cause.

Second, fermentative diarrhoea, in which there are five or six loose frothy stools which are acid enough to irritate the buttocks of the baby. There may be a little fever and malaise. This is usually due to too much sugar in the formula, although it is sometimes due to too much fat. The treatment is, first to cleanse the intestines by a single liberal dose of castor oil—(never repeat castor oil and never use it for constipation)—and follow by intestinal rest, giving nothing but water or barley water for twelve hours, gradually coming up to a correct formula.

In the third type, intoxication, you can tell at once that the child is seriously ill. There is usually fever, prostration and a certain typical appearance of the skin due to loss of body fluids; bowels move very frequently, perhaps every half hour; the movements are green and contain mucus and sometimes blood. This is usually due to an infection with germs from outside the body, as in dirty milk or washing bottles in dirty water, or from dirty hands of persons touching the baby. The treatment is the same as for fermentative diarrhoea but must be applied with much greater caution. It will take weeks or months to bring the child back to normal. It is often found in these cases that buttermilk is better digested than anything else and many doctors begin, after the period of starvation, with a dilution of buttermilk and water, boiled.

We hope that you will be able to reduce the number of these cases by instructing not only mothers but young girls in the care of babies.

In addition to general child welfare work, which you will plan and execute in your own district, you may expect to be detailed for special duty on surveys and other intensive work. The first survey will be made in Harrisburg where in certain congested districts nurses and volunteer workers will make a house to house canvass, for the purpose of discovering all children from birth to six years of age who are living under certain adverse conditions, namely, bad housing, improper diet, exposure to tuberculosis, physical defects and general neglect.

THE PUBLIC HEALTH NURSE.

Mrs. Bessie Haasis, National Organization for Public Health Nursing.
(To Nurses)

I want to bring to you the greeting of the National Organization for Public Health Nursing! We want every one of you in our ranks. Many of you already belong, and I hope every one of you will join. The organization is six years old. It represents nurses who are engaged in public health work and those who want to see it done in the best possible way.

I know that you, as a body, are not expected to give daily bedside care, but I know you do give it on occasions; and I know that you do believe yourselves to be educational workers.

We all suffered in the elementary schools from teachers who knew the subjects they were teaching, but did not know how to make them attractive and from whom we did not get anything. We are not educational workers unless we have studied the technique of educational work. There is danger of our being good nurses and knowing all about our subject, but not being able to get it across because we were not born good teachers. So I am advising the nurses to get right up close to the teachers and study the technique of teaching.

Teaching is measured not by the fear or suspicion you arouse, but by whether or not the person taught does something different after he has received the instruction. There is just as distinct a technique to teaching as there is to nursing or any other profession. I do not know the technique of teaching, but I do know the cardinal points which may interest you. In the first place, a thing that all teachers know is that every child and adult has a certain streak of activity running through him. These are known as motives and instincts, and the wise teacher is the one who hitches up the thing she wants done with something the child wants to do. If you want to teach boys what a pest flies are, and you talk to them about the anatomy of the fly it will not appeal to the average boy; but you can arouse a sudden interest in the extermination of flies by teaching him how to make fly traps to sell for fifty cents to the butchers and grocers. We do not teach little girls of five or six how to bathe the baby. We wait until she can coördinate her little muscles before we teach her sewing. We must wait until they are right in the current of things they want to do, and then hitch up to that sort of thing. The same thing applies to grown women.

A motive that is very often appealed to is the motive of rivalry. When a nurse is trying to get a school full of children to do the same thing at the same time there is not much progress made; but when she has aroused the spirit of rivalry between classes she is sure to get results.

Now there are some motives that we do not want to use. It is so much more constructive to use the motives that build up the person's pride. The motive of fear does not leave any aftermath of improvement in the character. It depresses all personality of the person, and it is not as good as spending three times as long in appealing to am-

bition, parental love or any force that brings pressure upward instead of downward. When you are teaching prophylaxis it is poor practice to hold up the idea that you are going to "get" something surely, because people do not always "get" it and people don't die by law. It does not get people into good habits; it tends to the cringing attitude and that is the attitude we want to guard against. We are building for character just as much as we are for health. If we talk jail, and rattle the ambulance wagon all the time we will not get very far.

Another principle of teaching includes the two laws of habit formations. They save time and energy. The first law of habit formation is to start the habit off with as decided an initiative as possible, that is to make the first occurrence a great event.

The second law is far more important than the first: Never suffer an exception to occur until the habit is firmly rooted. It is such an every-day thing with teachers. They never let a child say the multiplication table wrong. They keep him saying it again and again until he does it right. If you teach a mother to give an alcohol bath, don't trust to the first visit only. You have got to make the first time important, but you have got to follow it up two, three or four times. If your district is large, you should ask for more nurses so as to be able to follow it up again and again until the result is accomplished.

The fact is that people differ greatly. You don't all think alike; and you don't all remember alike—your impulses are different. But the ways that people remember things differ the greatest. It is not safe to trust to just one method of appeal to people's memory. We trust to the printed word or the spoken word in our instructive nursing when we ourselves would not remember it. How can you expect an ignorant woman to remember a thing you have told her when you have not shown her how it should be done? The only safe way is to have them do it after you have done it. We have got to tell them, we have got to show them, we have got to make them do it until they have every possible chance to remember it. We must teach according to the principles of psychology and common sense.

Nobody does anything difficult without reward. If you are a far seeing person or a far thinking person the reward may be in the far distant future, but the more elementary a person's mind the more immediate must be the reward. We must make it really worth his while in some way or another. In the meantime we cannot expect people to do difficult things. The one thing so many of us neglect is praise. We don't realize how grateful to the average person is a little word of praise from an expert. When a patient does things that are disagreeable we cannot neglect this cheap reward of saying a few words of praise for the difficult thing they have done with no other reward in sight.

Every teacher knows about these principles. If we are going to qualify as educators we should get some books on the principles of teaching. But more than any text book I think, you will find it valuable to make the acquaintance of teachers and talk with them about the knotty problems that come up in your daily life, and get their suggestions. In time we will have to draw very much closer to the teaching profession because we can put their children in much better shape to receive the work they want to give them, and we need them to give us the methods they use in their daily work.

PUBLIC HEALTH WORK.

Mrs. Bessie Haasis, National Organization for Public Health Nursing.
(To Nurses).

Public health nurses are looked to for much more than public health work. We are all social workers, but particularly if we choose to be. We cannot do the best medical work if we do not do social work on the side, as many of our medical conditions have a social cause and many social causes have a medical effect. I think we can make our contact such that our patients will be better off for having known us.

The reason we have this opportunity is that in seventy-five per cent. of the families you go into you are the only person who comes into that family who has a broader vision than they. There are churches, schools, recreation centers, clubs, etc., and we are losing a big opportunity if we do not try to interest our families in these agencies or in some other agency that will make life fuller for them.

If your mind works the way mine does you like to have something to check up by, and when you discharge a case you want something to check up by to find out whether or not you have done all that you can. A good plan is to use these five words, Health, Education, Recreation, Employment, and Morality; in looking over that family. You cannot go into a family without doing good. But have you done all the good possible? There are these five aspects in the family life which concern us, but, of course, the health problem is the outstanding factor. It is the disease in that family that takes us in, and we cannot give intelligent services until we have sized up the whole family, including the children, their housing, ventilation, diet, habits of personal hygiene, and the various conditions that tell on health. Those are just as much our business as physical symptoms. Let us do a thorough job, particularly on the health of every member of that family, quite aside from the immediate question that took us in.

Very closely tied up with the health problem is the education of the family, not only in health habits but liberal education as well. On the education depends the amount a child can earn when he grows up, and that means how much he is going to be able to spend. If his education is neglected, it means living on a low scale with poor housing, poor food, and poor clothing. It means that he and his wife and family are going to fall down in the health scale. If you go into a family where a child fourteen or fifteen years of age has gone to work, if there is any possible way to get that child back to school let us do it.

Very often you will come in contact with mothers and fathers who have not had enough education. I know lots of families where one member of the family would be glad to go to evening school if they knew where it was. Now supposing you cannot get adults to take any more schooling—if they are foreign speaking it is the duty of every one of us to get them into an Americanization school. If the man of the family is working in a hazardous industry where there is a chance of his being killed any minute, urge him to take out

naturalization papers so as to protect his family if he is killed and to provide his widow with a mother's pension.

Public health nurses can create demand for Americanization schools, classes in English, etc. Add up your experiences and tell them to somebody else. Tell them that you are not able to supply the needs of your community. You are too busy to conduct classes in dressmaking and the like, but get someone else interested. We want to show the foreign born people that we are anxious to teach them the best things we know, and learn the best things they have to teach us. So work both with the mother and the child.

If we can raise the level of the older people as well as the children we can make them all happier. The amount of education does influence, so much, the choosing of employment.

It is very easy to go into a family and consider the question of employment as settled by them. Yet a friendly visitor should size up the employment of each member of the family. For instance, let us start with the children: Endeavor to keep them in school as long as possible, then see that their work is chosen for them. There are many kinds of employment for children that do not lead anywhere at all. The average child going to work at fourteen years changes positions fifteen or sixteen times, and he is no better off two years after he starts to work than when he began.

In many of the large cities there are Scholarship Funds for keeping children in school. If the children are deserving and the parents need the child's support, that child is kept in school and a weekly amount of three dollars, which is the most that child could earn, is paid to the parents for a period of two years. There are many kinds of work that have no educational value. See if you cannot get children into occupations where they can learn something, and in positions where they will be advanced.

Children do not have the capacity for choosing jobs wisely. Boys like to sell newspapers, and work for the Telegraph Companies. This work brings them into the worst streets and worst sections of the city. Girls, too, get into just such employment, which has no educational value at all. Domestic employment is not considered favorably for girls, but if the right family is chosen it may be of better moral value than any other kind of employment. All the parents seem interested in is the pay envelope. Don't go out of a family until you have done something to better the employment of that family.

Very closely tied up with the education, employment, and health of the family is the question of recreation. Do we inquire of the mothers where the family has been spending its evenings? We will find in most families that the children get an undue proportion of recreation. The fathers, as a rule, have various ways to get recreation, but the majority of mothers fall short on recreation. They go about day after day without any recreation being planned for them. If we could just see that the mother went to the movies once a week it might give her a ray of hope that she has not had for fifteen or twenty years. It is sometimes considered ridiculous to plan exercises for mothers. They are in constant motion, but they are not getting exercise in the fresh air.

It is surprising to note the indifference some mothers have as to what becomes of their boys and girls after school hours. Let us strengthen the hands of our mothers to keep discipline over their

children because it is their responsibility. It pays to spend a long time in teaching the mother how to handle her own responsibilities. It is our duty to collect the cases where we find the need of recreation, and present it to someone else in the town and let them provide that recreation.

There is one other element left in the family life which is just as important, and which is receiving less attention. It is the question of moral and spiritual force—moral and spiritual ideals expressed constantly in the family. We see people, however, who seem to be able to make a living without them, and yet they are not interpreting life as they might, and are not realizing their greatest possibilities.

I feel that as educated women, and women working for the best interests of our families, we can emphasize to that family the desirability of having spiritual and moral ideals in the family. We know that public health nursing does not consider religious denominations. But don't you think we are missing an opportunity unless we bring that family a little nearer to the spiritual and moral force which they are drifting away from? If we can strengthen the spiritual ties that exist, so much the better. So it is in the various problems that come up in our daily work. By demonstration we can make them feel the force of our ideas. You have got to be spiritual yourself to prove to them that they must be. And if we can just say "I know what it means, but I have faith to know that things will work out right if you do the best you can," it may waken a new hope and a new encouragement in the breast of some very discouraged mother or father. The expression of such ideals will be a great help to the children.

So at the end of the month, let us look over our cases and see if we are doing the best we can for each family. Have we looked over the health of every member of that family and gotten all the help we could from everybody in the community? Have we made it our business to see that every member of that family is being educated, or is going to have all the education possible? Then the question of employment—are they are engaged in really profitable employment both in satisfaction and money? And have we seen that each member of the family, the mother included, is having proper recreation? And is that family living from hand to mouth as far as things of a spiritual nature are concerned, or are the members laying up a reserve of spiritual strength to help them through harder days to come?

DEPARTMENT WORK FOR NURSES.

(Quiz Conference).

Miss Alice O'Halloran, Chief, Division of Nurses.

Q.—First of all, do you know what we are to be called hereafter?

A.—Public Health Nurses.

Q.—What do you feel is the first essential in the Public Health Nurse?

A.—Health and tact.

Q.—Which comes first, tact or enthusiasm?

A.—Tact.

We need ability to carry out this work. We will often meet with problems which seem to baffle us. We do not pay enough attention to ourselves. We need to study ourselves and it is our duty to do so.

If we are interested in our work we are bound to do good work. The girl who starts in the morning thinking about a date which she has at eight o'clock that evening will not be interested in her work that day.

We must not feel that there is not a social side to our work however. The woman who cannot get into the social side of the work is a misfit because she loses the interest that she must have to solve her problems.

A great deal depends on our attitude to the people we meet. If we meet them sincerely and kindly they will trust us and work with us. If we do not meet them that way we will reap only criticism. We will be judged by our attitude toward the family and the associates of the family and we must scrutinize our attitude toward other workers in the field. If we work with them we will win them over to our cause.

Another big factor in Public Health Work is the ability to impart instruction. We may know a great deal and still lack the faculty of imparting our knowledge to others. We need to cultivate different methods of imparting instruction. Many are beautiful talkers; others may not be able to talk but can impart their knowledge in a practical and impressive way. How to impart knowledge and to develop the method which is natural to us, individually, must be the constant purpose of each one of us.

There is one big part of the work that we must not forget and that is to encourage coöperation by telling and showing how much we appreciate it. If something is done well, show the performer that you notice and appreciate it. Whenever there is improvement, show your appreciation also.

It is my impression that the policy of the department hereafter will be to work directly through the county units. That is, the County Medical Inspector will be the health chief of his county. All the Dispensary Chiefs are not County Medical Inspectors. The nurses in dispensaries will be responsible directly to their dispensary chiefs but the county on the whole will be a unit. If it is possible for me to get additional nurses I will do so. I have in mind placing nurses

in each county and am going to try the plan out first in a few counties. In certain counties where there is a large rural district I have asked for automobiles. Some of the nurses have machines but it is not yet decided just how they will be recompensed or what rate of mileage will be allowed. Each county wants to make the best showing on the amount of funds allowed and will try to get the best value for the amount expended.

Each nurse will receive an outline of the new county work. The outline will be submitted to Dr. Hull, Dr. Schäffle, Mr. Emerson and finally to Dr. Martin.

In going into county work, find out the organized workers and the name of the Chairman and give her the privilege of selecting her committee to help you. The Emergency Aid has an organization in nearly every county and they can be of help to you in your work. The American Red Cross has an organization in every county and the workers of this organization will be glad to work with you. You must give each woman some special work to do.

VENEREAL DISEASES.

THE DEPARTMENT'S PROGRAM AGAINST VENEREAL DISEASE—Major S. Leon Gans, Chief of Division of Genito-Urinary Dispensaries.

GONORRHEA AND SYPHILIS—Major S. Leon Gans, Chief of Division of Genito-Urinary Dispensaries.



GONORRHEA AND SYPHILIS.

By Major S. Leon Gans, Chief of Genito-Urinary Dispensaries
(Abstract.)

All urethral discharges should be looked upon as Gonorrhea till proved otherwise.

Diagnosis, based on the microscope, is not infallible. Clinical course of acute cases generally rules out Micrococcus Catarrhalis, which has the same staining reaction and similar morphology.

Gonococci are deposited on squamous epithelium in fossa navicularis, and promptly penetrate between the inter-cellular cement substance, putting them out of reach of any antiseptic which may be thrown into the urethra. Hence, an immediate application of a Gonococcicide is needful. This will prevent the disease in ninety per cent. of cases. It is efficient, but to a lessening degree, for twelve hours.

Treatment depends upon anatomical location of infection, the compressor urethra muscle acting as a valve preventing fluids going from before backward and from behind forward; therefore, the necessity of a two glass test, as the infection travels by the lymphatics and is not a mechanical surface extension which may be limited by a constricting muscle.

The two glass test was demonstrated as a mechanical proposition, using a plumbing problem as an example. Even when the disease has manifested itself by ardor urinae, and a thin discharge, a carefully applied abortive treatment would be successful in half the cases.

In the systematic treatment, mild solutions are used. Silver colloid and protinate astringents in states of decline. Patient to be checked each visit with two glass tests, and character of the shreds. Tests are briefly described, as is the technique of the hand injection, and the method of teaching the patients its proper use.

The two glass test indicates the anatomical portion of the urethra involved, and should be made at each visit of the patient.

First Glass—turbid or clear with shreds.

Second glass—clear, no shreds, indicates anterior inflammation.

First glass—cloudy or clear with shreds.

Second glass—cloudy or clear with shreds indicates posterior inflammation.

Cloudiness due to urates or phosphates should always be eliminated. *Technique of the hand injection* should be shown to the patient, who should demonstrate to the physician his ability to properly use it.

First, the patient should retract and wash the fore-skin, urinate, sit on the edge of a hard chair, draw up the fluid to be used into a blunt point, glass nozzle, bulb type syringe of 1 oz. capacity. Exclude the air from the syringe. Draw the penis at right angles to the body, at a slight tension, thumb and index finger placed latterly to the meatus. The bulb should then be compressed slowly, syringe withdrawn, meatus compressed and fluid retained—five minutes for the antiseptic fluids, and two minutes for the astringents.

Cure.

The test of the cure is based on the absence of gonococci from the material expressed by massage, from the prostate and seminal ves-

cles. If there be a continued and persistent slight mucopurulent discharge, repeated examinations should be made until laboratory findings are negative.

SYPHILIS.

Diagnosis.

Spirochaeta pallida and confrontation.

Wassermann—important to begin treatment, before Wassermann test is positive, when spirochaeta is demonstrated.

Routine Treatment.

Using Arsenic to render patient non-infectious.

Dose—0.3 grms. of salvarsan.

Patient's weight to increase or remain stationary during treatment. Must feel well.

Definite symptoms which indicate $\frac{1}{2}$ dose or double time interval between doses of Salvarsan are—

Cardio-vascular disturbance (watch for precordial distress or pain and administer m. 2 Sol. Adrenalin Chlor.)—shock, collopse, vomiting after each dose. Drug should be given when stomach is empty.

Primary Stage.

Spirochaeta present or Wasserman positive.

1. Week of treatment of Salvarsan.

1.	Gm.
2.	0.3
3.	0.3
4.	0.3
5.	0.3
6.	0.3
7.	0.3
8.	0.3 Take Wasserman if positive.
9.	0.3
10.	0.3
11.	0.3
12.	0.3

Mercury by skin, watching for beginning signs of salivation, which are foetid breath, tenderness of the gums. Examine urine at least once a week for polyuria, anuria, indicating cessation of the administration of arsenic. Watch for albumen and casts indicating cessation of mercury.

Observe anaphylactic reaction of arsenic, both immediate and remote.

When the immediate symptoms occur, such as distress or precordial pain, stop administration of the drug at once; the next administration should be half dose, given under closest observation.

The remote symptoms are as follows:

Lowering of general health, headache and anorexia, erythema dermatatis, severe nephritis, jaundice, hemorrhagic encephalitis.

Contraindications are advanced cardio-vascular disease, aneurism or advanced cerebro-spinal disease.

Cure.

Wassermann negative every three months for one year without clinical symptoms; but should be taken once a year during life.

Outline of work of division emphasizing co-operation between health departments and profession.

Prophylaxis described in detail.

THE DEPARTMENT'S PROGRAM AGAINST VENEREAL DISEASE.

Major S. Leon Gans, Chief, Division of Genito-Urinary Dispensaries.
(Abstract).

Statistics have been presented to-day proving our obligation to the public to fight the different contagious diseases and it seems to be the job of the Health Department and the doctors of the State to assist in fighting all diseases.

The Genito-Urinary Division has figures which justify it in the request for recognition and as a matter of fact statistics in the United States Public Health Service office show that all contagious diseases combined, measles excluded, are represented by 29.4 compared with 102.3 for venereal diseases. Venereal diseases are almost four times as prevalent as all other contagious diseases combined, measles excepted.

Venereal diseases may not be responsible for as many quick deaths as the other diseases but hold their own when it comes to long suffering followed by death, and cause more suffering, social, physical and mental, than all other diseases combined.

Certain figures may be of interest to you. There were 24,234,021 men drafted in the United States during the recent war and 3,208,446 were examined. A conservative estimate based upon this examination shows that 2,600,000 men in the United States are infected with venereal disease at the present time.

I believe that our gynecologists will concede that they will have to go out of business if we control the venereal disease situation. More than eighty per cent. of gynecologic operations are alleged to be due to gonorrhea. Visits to our gynecologic departments and our insane asylums will surely convince the skeptical of the importance of making this fight against venereal disease a relentless one.

Some time ago, I started an investigation of certain penal institutions in the State of Pennsylvania. I wanted the figures to present a certain argument in one of the larger courts. In one of the largest institutions a fraction over seventy per cent. of the inmates showed a positive Wassermann, and we have reason to believe confidently in the laboratory that made the tests. Of the seventy per cent. that showed positive Wassermans about twelve per cent. had clinical manifestations.

We look upon syphilis as a venereal disease. It is not necessarily a venereal disease. A few weeks ago a letter was sent in from a dispensary, with a detailed report of a man who had applied for treatment for syphilis. The nurse did some social work, and found that he had contracted it from the mother who, in turn, had contracted it from a ten weeks old infant. A syphilitic person had kissed that baby; the baby developed a chancre on the mouth; the mother became infected through nursing the baby; and the mother passed it on to the father. In certain parts of Russia, ninety-five per cent. of the population are syphilitic; and out of the ninety-five per cent. only four

per cent. become so venereally,—the rest become infected in various ways, thus, in some places, it has become an ordinary family contagious disease.

The method of control of venereal disease has been suggested by the Army. We have learned our lesson in army work. It is a prevalent idea that most all soldiers are infected. It so happens that, while many soldiers are infected, it is proven that for one soldier infected, five civilians are infected. Eighty-five per cent. of the drafted men coming into our camp at ——— had venereal infection. True, a large percentage were negroes. At the end of three months we reduced that number to less than fifteen per cent. There were various methods used to reduce venereal diseases and keep them reduced. One of them, and the principal one, was our prophylactic treatment work. Later the army regulations called for prophylactic treatment when exposed to infection.

We do know that sixty per cent. of the male population are infected with venereal disease before they reach the age of thirty. For every three and a fraction men infected one woman is infected.

These figures are based on facts not fancy.

The method of attack which the Army used can be used in civilian life but it must be modified somewhat. The method must be definite, sane and energetic. Not until very recent times could the subject be openly discussed.

Ten years ago if you introduced the subject in any respectable home you were liable to expulsion but now the subject is introduced into the conversation by the members of the family. This is due to the fact that the finger of silence has been removed from the lips through intelligent propaganda.

We have had the same fight, and are still having it, in the case of the disease smallpox. When vaccination was first proposed it was antagonized until people learned its value.

The aims in the venereal campaign are three. First, we want to detect disease; second, we want to cure it; third, we want to prevent it. In other words we wish to deal with it as we would with any other disease. We wish to fight it along sane lines.

It is fair to assume that ninety-eight per cent. of all prostitutes are infected. Our records show that the percentage runs from ninety-eight to ninety-nine per cent: In the Allentown dispensary, where the service has been the largest in the State and where we have a protective officer, we had five hundred visits. In Harrisburg we have no protective officer and there we have had nearly four hundred visits. There we are trying another system. We are explaining to them the infectiousness of their condition and telling them that they can help the community by advising other people to come to the dispensary. Then too our nurses are doing social service work, visiting the families of patients, and thus other cases are discovered and sent to the dispensary. The chiefs of the Genito-Urinary Dispensaries have received an intensive course of instruction in genito-urinary work.

We are placing our dispensaries in hospitals, wherever possible, in the interests of coöperation and economy. Cases are to be divided into three classes: those who can afford to pay a physician: those who can afford to go to a hospital and pay for medicine; and

those who cannot pay anything for treatment or medicine. The State cares only for those who cannot pay. If any physician or other person knows of a patient attending a State clinic who can afford to pay for treatment we ask him to report the fact to us and the patient will then be refused treatment. We are not in competition with either the medical profession or the hospitals.

The most important angle of attack is that of prophylaxis. We have established in this State about forty prophylactic stations. For three consecutive days in each city announcement was made. There has been no criticism concerning these prophylactic stations.

The army has shown that the prophylactic treatment is ninety-five per cent. effective when applied by an expert. The other prophylactic treatment, that applied by the person himself, is seventy-five per cent. effective. The new prophylactic package being prepared will be ready in a few weeks and will contain instructions for its use. We have ready and framed for distribution over the State, sixteen thousand signs, similar to those used by the U. S. Public Health Service in warning of the dangers of infection, telling how disease is acquired and what to do at the first signs of its appearance. The sign also contains a warning against quacks.

Another attack will be against the quacks. In 1870 a law was passed making it illegal to advertise any drug or nostrum for the cure of venereal disease. When I undertook to put it in force I found that it reached everyone but the doctor. A law has just been passed, however, completely covering the advertising venereal doctor.

DISCUSSION.

Q.—How far can the health officer of a third class city go?

A.—He can go the limit. Dr. Butz is interested because he has been called upon to round up some cases. We have cases that come to the dispensary once and refuse to come back. We have sufficient power to quarantine those who refuse to return to the dispensary for treatment, and we have been doing quarantine.

At the request of Miss O'Halloran I will speak of the nurse in relation to the management of venereal diseases. Deal with the cases as you would any other communicable disease. The spirocheta or the gonococcus never travels alone. It is always in pus; it is always in secretions. Take the same precautions that you are expected to take in handling a pus case. The chancre or primary lesion in syphilis is highly infectious. Syphilis attacks the skin and mucous membrane. The gonococcus attacks only mucous membrane. Gonorrheal pus on any mucous membrane is highly infectious. Instruments should be boiled in soda water, wrapped in cotton and kept separately.

Q.—Is it necessary to use rubber gloves?

A.—You do not need rubber gloves. A finger cot on the index finger and one on the thumb are all that are needed. Gloves are more needed in cleaning up than in operating. We furnish heavy rubber gloves.

Q.—Does the law permit you to go out and arrest people who have venereal disease and who refuse to come for treatment?

A.—Quarantine gives this power.

Q.—If a patient who can afford to pay tells you that he is unable to pay what shall be done? There is no way in which we can tell whether he is honest or not.

A.—That is one of the old problems that all of us have had to solve. We must look to the doctors for help in this matter. We may ascertain the name of his doctor from a patient and inquire of him as to the patient's circumstances.

Q.—Will anything be done to prevent druggists from prescribing to venereal patients?

A.—Practically all the druggists in the United States are pledged not to do so; an action highly to their credit.

Q.—When patients promise to go to a private physician and do not go, what shall we do?

A.—We can give them the choice of doing so or of going to a clinic, under penalty of quarantine.

COUNTY MEDICAL INSPECTORS AND THEIR RELATIONSHIPS.

(Symposium and Discussion)

THE RELATION OF THE COUNTY MEDICAL INSPECTOR TO THE STATE HEALTH DEPARTMENT—Dr. H. L. Hull, Chief Medical Inspector.

COOPERATION BETWEEN MEDICAL INSPECTORS AND DISPENSARY CHIEFS—Dr. C. H. Miner, Wilkes-Barre.

COUNTY MEDICAL INSPECTORS AND THEIR PROFESSIONAL BRETHREN—Dr. I. S. Plymire, Doylestown.

COUNTY MEDICAL INSPECTORS AND LOCAL HEALTH BOARDS—Dr. C. B. Wood, Monongahela.

**INCREASED EFFICIENCY IN THE COUNTY MEDICAL INSPECTOR'S WORK—Dr. C. H. Witmer, Lancaster. **

THE COUNTY MEDICAL INSPECTOR AND SCHOOL INSPECTION—Dr. J. T. Butz, Allentown.

THE COUNTY MEDICAL INSPECTOR AND THE STATE NURSE—Dr. J. S. Miller, York.

THE COUNTY MEDICAL INSPECTOR AND COUNTY ORGANIZATIONS—Dr. C. R. Phillips, Harrisburg.

THE COUNTY MEDICAL INSPECTOR AND NUISANCES—Dr. S. H. Iams, Waynesburg.

THE COUNTY MEDICAL INSPECTOR AND THE CENTRAL OFFICE.—Dr. H. C. Frontz, Huntingdon.

EPIDEMIOLOGY AND VARIOUS REPORTS REQUIRED BY THE MEDICAL DIVISION—Dr. H. L. Hull, Chief Medical Inspector.

THE NURSE AND TUBERCULOSIS WORK—Miss Nellie Loftus, State Health Nurse.

NURSES AND COUNTY MEDICAL INSPECTORS—Miss Alice O'Halloran, Chief Nurse.



THE RELATION OF THE COUNTY MEDICAL INSPECTOR TO THE STATE HEALTH DEPARTMENT.

Dr. H. L. Hull, Chief Medical Inspector.
(Abstract)

The duties of the County Medical Inspector are being tremendously enlarged. His position from now on will be a much more responsible one. We shall expect everything that happens in the county to pass through the hands of the County Medical Inspector. A carbon copy of all orders to Health Officers will be sent to the County Medical Inspector and he will be the first one held to account if anything goes wrong in his county. For that reason we want you to feel the responsibility that has been added to your position.

The County Medical Inspector is going to be the Department's county representative.

His first duty is "to be called upon by physicians or Department Health Officers for diagnosing doubtful cases." In your county there are going to be cases in which there is doubt as to diagnosis. The case we are most interested in is the case where there is suspicion of a communicable disease. Always go after these cases and go after them quickly.

Information comes to you from various sources; through a health officer; an anonymous letter; sometimes through gossip. When you get the information go after it and if it is possible to get in touch with the attending physician, if there be one, ask him to accompany you. Remember this; when you go out on Department work you are going out as a public official, not to make a private call. Always try to go with the doctor, but when he doesn't want to coöperate with you or when he cannot be reached, don't hesitate at all; go as a state official. I go thus into detail that you may realize what your powers are.

When you visit a case always take a history; take a note book with you and note the name of the patient, his address, his age, and the date when he was first taken sick. Then try to get some history of previous illnesses and a history of various symptoms he has had and how long he had them. Take specimens in every case and be prepared to make tests. If you secure this information you have something to go on.

The County Inspector's second duty is "to investigate epidemics of communicable diseases." Every time there is a case of typhoid fever it ought to be investigated. Every time you get a case of communicable disease in a community it means a possible epidemic in that community. Measles goes through a community like wildfire.

You will have to combat all kinds of ideas from old physicians in the community and from some parents who think their children must have certain diseases. When you hear of an outbreak of some doubtful disease in a community, first of all see a case and get an idea of what the disease really is. If you read in a newspaper about an outbreak of "Virginia measles," see a number of the cases. Find out whether they are quarantined. When you have made your diag-

nosis see the suspects, for it is the suspects that give us the trouble. Remember that it is measles until you prove it something else. In every instance when you have made your investigation give us a good report,—one which covers the essential facts. If it is a case of smallpox we want to know where the patient came from; where he was before becoming sick; what city or town; what street and the number of the house; how long he was in that house; whether there were any cases in the house at the time; how he traveled, whether by train, trolley car, or other conveyance. If possible give us something definite to be given to the railroad officials, so that he may be traced. We want you, from now on, to take these things up yourself, and to follow them to a definite conclusion. If a case of smallpox has gone to a neighboring town call up the Board of Health in that town and give them the information you have and let them get after the patient; notify the railroad company on whose train he traveled, and give the central office a report in sufficient detail to furnish the essential facts.

The County Inspector's third duty is "the vaccination of school children." In vaccinating school children it is not intended that the State Department of Health should pauperize the general public. We are anxious to accommodate the people to whom it is a hardship to pay for vaccination, but in these days I doubt whether there are many people who can't afford to pay for vaccination. Our object however, is to get these people vaccinated. We will furnish the vaccine free of charge but we expect the people to come to your office, except where the person has been a contact. Then it is necessary for you to go after him.

The vaccination law was changed this year to include in its penalties school directors and superintendents. They are now equally responsible and may be prosecuted and prosecution may be conducted anywhere in the county. A doctor may not vaccinate a child and issue a certificate the same day stating that he has successfully vaccinated it.

The County Inspector's fourth duty is to "visit cases of eruptive diseases or suspicious throat conditions where no physician is in attendance."

You will hear of persons who are suffering from indefinite sore throat and you should always make this investigation yourself. It is up to you to investigate and give us a report on it. If you are refused admission we are ready to take legal action, but we do not like to have legal action taken except on advice from the central office, except in cases of great emergency.

The fifth duty is "to direct all quarantine measures in second class townships and in first class townships and boroughs where the department is in charge." If there is an outbreak of any communicable disease and quarantine is not being observed, you become responsible. It is the duty of the health officer, when he places quarantine, to explain just what it is for and what it means. We don't want to prosecute unless it is absolutely necessary; we want to try to gain co-operation and to do this by being kind.

When a person has been given full information and understands the law and then violates it, there is no excuse for not immediately ordering a prosecution. In boroughs where the department is in charge, the County Inspector must be constantly on the lookout be-

cause people expect things to be just right under department management.

The sixth duty is to "supervise medical inspection of school children and appointments for this work." The medical inspection of school children was formerly under the Medical Division but the Commissioner has now made it a separate division and Dr. Strode, who has charge of the work, will talk to you on this subject within a few days.

The seventh duty is to "enforce state health laws and regulations of the Department." The County Inspector must be familiar with the laws of the department and whenever violations of the law occur we must have accurate details and reliable witnesses if possible.

The eighth duty is to "assume charge of relief work in the county when disasters occur." When a disaster occurs in any locality we always enter the field and offer our services with the idea of helping and using local organizations. At the present time we are working out the details of how to handle these things in the future, and with the County Inspector in charge of the work in his county and with either myself or my associate or assistant available in the central office, at all times, we expect to be better organized for this emergency work than ever before.

The ninth duty is to "grant permission and arrange for transfer of a case of communicable disease."

The County Inspector must grant permission and arrange for the transfer of any communicable disease. We must stop the promiscuous transfer from one place to another of persons suffering with communicable disease; it must be done only by the permission of the County Medical Inspector. Some one may call you up and say he has a case of scarlet fever that he would like to remove to another town. Don't tell him to go ahead and move the patient. Find out the facts in the case; find out how they are going to move the patient. It must not be on a trolley car or train or in any public conveyance, but only in some private conveyance that can be thoroughly disinfected. Further, you must communicate with the local Board of Health in the community to which the patient is to be moved, to see if they are willing to have a case of contagious disease moved into their town.

If they grant permission for the transfer of the case give them full information as to just where he is going, the street, number of the house, etc., so that they can arrange to quarantine him as soon as he arrives. You must also arrange for the disinfection of the house after the patient leaves and for the disinfection of the automobile or carrier. If an automobile the woodwork and cushions should be thoroughly mopped with a solution of creolin, or bichloride. Great trouble comes from lack of attention to certain details in the transfer of cases of communicable disease.

The County Inspector's tenth duty is to "examine physically and mentally applicants for position of health officer."

We have a little confidential card file and every person in the department is listed in that file, with a good mark placed opposite his name for things that are good and a bad mark for things that are bad. We want a good team and we are starting with the health officers and are going right on up the line. No health officer is appointed until he has had your recommendation. An applicant is sent

a list of the duties of health officers and then told to arrange with you for an agreeable time when you can give him the quiz. We do not of course expect the same degree of intelligence in a person applying for a position as health officer as we would expect were he applying for a higher position, but we do expect him to have proper physical and mental ability. There is going to be a great weeding out of health officers. The idea is to eliminate the bad, improve or eliminate the indifferent, and elevate the good. This will be done by enlarging the districts and, I hope, by increasing the wages of health officers who merit the increase.

The eleventh duty is "to instruct health officers in their duties and direct and supervise their work." Show the health officer what to do with his records; how to quarantine a house; how to report to the central office. Cover all the details of his position the first time he visits you if you decide he will make a good health officer; if not, don't waste time on him.

The twelfth duty is "to arrange for issuing orders of relief for persons indigent through quarantine." The county poor authorities should provide the necessities of life and medical attention to families rendered indigent because of quarantine. The state has no authority to do so and the county poor authorities must do it. You, however, must see that it is done.

The thirteenth duty is "to make housing inspections when directed by the central office—for overcrowding or insanitary conditions in tenements, lodging or boarding houses." Make a written report of conditions found and send it to the Bureau of Housing, Engineering Division.

The fourteenth duty is "to inspect public eating places and examine their employees when so directed by the department." You will be given details of this work by Mr. Ness, who has charge of it.

The last duty is to carry out such additional instructions as may from time to time be sent to you from the central office.

One more thing is the matter of visiting cases of contagious diseases. As doctors, we ought to be most careful to observe all the precautions necessary. I have gone to see a case of smallpox with a local physician, and have seen him put on an old coat in his auto, go into the house, examine the patient, and come out and throw the coat in his machine. Such things make a bad impression on the householder.

We will issue a gown to every County Medical Inspector; these gowns button in front and are olive drab in color. We expect you to wear this gown every time you make a visit to a house where you suspect contagious disease. You should also wear rubbers, especially in desquamating diseases. After you have examined your patient and before you leave the house, wash your hands thoroughly; when you come out of the house take off your gown, lay it with the clean side down, and sprinkle with formaldehyde solution; then roll up your gown putting your rubbers inside, and place the entire bundle in your bag. Disinfect your notes, your pencil, and your own hands. The impression the householder will receive, if you do these things and do them thoroughly, is the kind of impression he ought to have.

If you do not suspect a contagious disease and on making an investigation find a case of, say, scarlet fever and do not have your gown with you, examine the patient but be careful not to touch anything else in the room. It is well to roll up your sleeves before ex-

amining the patient and before leaving the house always wash the hands thoroughly and disinfect your thermometer; then when you reach home take off your clothes and spread them in the sunshine or sprinkle with formaldehyde solution.

DISCUSSION.

Q.—Do these things apply only to townships?

A.—These things apply to the places where you have jurisdiction. Ordinarily they are, first of all, second-class townships, and boroughs in which we are in charge, but you have supervision over everything in your county. In a city you would go to see suspicious cases with a representative of the Board of Health. They have no right to move any case without your permission.

Q.—Referring to the vaccination of school children—does that include parochial and private schools?

A.—Yes. The new law especially mentions that.

Q.—Suppose you want to move a case of contagious disease from one community to another and the Board of Health of the community to which you want to move the patient won't give their consent; do we go over their heads and move the patient regardless of their refusal?

A.—No. If the authorities of a community say "no" we must allow them to exercise their right of refusal.

Q.—Do I understand that school directors will have to be vaccinated according to the new law?

A.—No, but we can compel them not to interfere with teachers in enforcing the law.

COOPERATION BETWEEN COUNTY MEDICAL INSPECTORS AND DISPENSARY CHIEFS.

Dr. C. H. Miner, Wilkes-Barre.

I have a boy eleven years old and I want to select for him a preparatory school, in a few years. I don't want to select a school with the best buildings and largest appropriation, but I want to select a school where they will look after his health and have someone with personality to inspire him with the desire to do his very best.

Now if I can get a school as good as this summer school, with a chief like we have, I will feel that I have succeeded.

We have in Luzerne County, four dispensaries; one in Wilkes-Barre, in the center of the Wyoming Valley; one north of the Wyoming Valley at Pittston; one south of the Wyoming Valley in Nanticoke; and one in Hazleton.

First—Now to plan a coöperation; I believe the first thing to do will be for the County Medical Inspectors to get busy and perfect the organization that has been suggested by Colonel Martin; to get up coöperation and then prepare a directory of all organizations that can coöperate in the county. Of course, we will include in this organization, Boards of Health, Health Officers in the county, Poor Boards, officers of the different organizations and of the Visiting Nurses Association, Associated Charities, the local hospitals, the school boards, and the organizations that can give us help in the care of advanced cases of tuberculosis, the Red Cross and the Emergency Aid. After we have prepared this organization, we should have a directory in each dispensary with the names of officials of that organization and the addresses.

Second—I believe we should secure the funds obtained in each county from the sale of Red Cross seals and the Dispensary Chief should be able to use the money for two purposes—carrying on an educational campaign for the prevention of tuberculosis and secondly for relief work. We have frequently been able to get control of that money through the organization of a local society for the prevention of tuberculosis. I believe the educational campaign should be carried on through the State exhibits, through lectures in schools and factories and the distribution of pamphlets, and if possible, the physical examination of employes in factories.

Third—I would expect the dispensary to carry on a special campaign for examination, supervision and treatment of every member of every family that applies for treatment at the dispensary. First we would take all the children in the family and organize a nutrition clinic, for children who are not tuberculous. We would have a nutrition class, where we would get up a competition among different children to increase in weight and improve in general health. This has worked out very well in Boston and New York State.

Fourth—We would have instructions in home economics by the nurses in the homes. We have had talks on that subject during this camp. We shall expect the nurses after their very valuable instructions in this camp to do this.

Fifth—We would try to establish clinics of mental hygiene in each dispensary. We know their value. We know that if we have these two things we are caring for the health of the children.

Sixth—We would examine all the patients and all the children for obstructions in the nose and throat and see that tonsils and adenoids are removed. In many cases of children where we think of tuberculosis we find tonsil trouble.

Seventh—I would like to carry on a campaign in regard to housing conditions. We want to improve housing conditions. Of course, that comes under the subject of home economics.

DISCUSSION

We are very anxious to get up some plan to keep patients in the sanatoria or hospital. About one-third of all patients we send away come home in two or three weeks.

Q.—They come home—Why?

A.—They become homesick or dissatisfied.

Q.—And the case who is dangerous to five or six children and lives in one room and has to sap the vitality of the women to wait on him, and he insists upon going home,—what should be the attitude of the State toward that man or woman?

A.—In the past, unless given special permission, we discharged them from the dispensary for not living up to the rules of the dispensary.

Q.—Col. Martin. We drop responsibility? How should we play the game?

A.—Dr. Miner. We must do our best to improve home conditions, if possible to remove the children from the home under more favorable conditions.

Q.—Col Martin. But is not tuberculosis a contagious disease, is it not a reportable disease, and should it not be a quarantinable disease? Have we not the right to hold that man when he is a source of further infection in the State.

A.—Dr. Miner. Yes. We should play the game big and sacrifice the individual to the State.

Q.—Then why should that man go back to his home or five children to infect his children?

Q.—Can we compel the establishment of a sanatorium in each county?

A.—I believe if there is some way of establishing these sanatoria in each county with State aid, it should be done.

Q.—Dr. Miner, do you have trouble getting patients returning from sanatoria back to the dispensary?

A.—Yes we have difficulty in some cases; others come right back. if they are in poor health and not improved; if they improve under a short stay they very often believe they are all right.

Q.—Don't you think the nurse is the main feature in getting them back? When cases drop from your dispensary who are a menace to your community and their families, what do you do about it?

A.—Send a nurse.

Q.—After that what do you do about it?

A.—Send the nurse again.

Q.—Is it possible to break up a home by removing the head of the family or mother from that home under the present laws of Pennsylvania?

Q.—I would ask you further whether it is possible under the present laws to remove the head of the house who has smallpox? The same rule applies.

A.—We have never forcibly removed a patient to the hospital who does not want to go there.

Dr. HULL—If in Mr. Myer's opinion we have no authority to remove typhoid fever, I do not believe we would have authority to remove patients, even though a menace to the community. I know since I have been in the department we have never been able to do this.

Col. MARTIN—Of course, we do not break in, but there are other ways of attaining the desired end. So I differ from my colleague, in that we can do it; and what is more we will.

Just in that relation, I might say that the city of Chicago rather recently passed a city ordinance just in line with this discussion. Any patient who is not careful at his home and does not take precautions against spreading the disease, can be removed to the hospital and it is being done there and being done successfully.

We have full power to do that now by our laws.

COUNTY MEDICAL INSPECTORS AND PROFESSIONAL BRETHERN.

Dr. I. S. Plymire, Doylestown.

About eleven years ago or a little longer, I was called to take the place of a man who resigned on account of chaotic conditions in our county and on account of failure in handling public tuberculosis work. I took charge with a great deal of timidity, because in looking around I found I would not have the sympathy of any physicians of the county. To this day, I hardly know why the physicians assumed the attitude which they did then, excepting in certain instances. In some instances I believe it was due to the fact that they wanted to please their patronage and feared them at the same time, and in other instances, I believe that many of them had a feeling that if any effort was made to control communicable diseases their income would be reduced.

Things, as I have said, were in a chaotic and frightful condition, so under the guidance of my superior officer I had the Health Officer bring prosecution in several instances. I hardly knew how this was taken by the medical profession as they remained very quiet. However, at the expiration of a year something took place. I was haled into Medical Society Court for a hearing. I gave them a detail of experiences of the Department of Health in Bucks County, my trouble with them, and finally it was dropped quietly, and nothing more was done regarding that. At the same time I was told by a very eminent man in public health work that he thought I was pursuing the right policy, except prosecution. Later I came to the conclusion that that was wrong. I have gradually departed from it.

Before I continue that feature, I just want to mention the diagnosis of cases. During the poliomyelitis epidemic I, of course, confirmed the diagnosis of cases and I refused the diagnosis of many cases around Bristol and Doylestown, and ten or twelve miles south. A physician somewhere made a diagnosis of poliomyelitis and it was reported to the local board of health instead of the State Board of Health, and I was not told to examine the case until later. However, I got a telegram. That was brought up again by the society and a great deal of correspondence took place against me. I, however, did this and it was my sole defense. I made an effort to have the family physician meet with me in this home at the time I examined the patient; he was out and I felt that under my directions and the authority given to me, I was justified to go in to make the examination. There would have been no trouble had I not changed diagnosis. We have to watch the physician; he sometimes phones to me and says "Doctor, I have something here that looks like so and so, but I don't believe it is." I reply "Don't you want me down to see the case with you?" "No, I am all right." Time slips along and the first thing you know, in two or three days when you think of slipping down to make the diagnosis it is too late. Now in some instances, I find the doctor does that in order to protect himself; he has a well-to-do family who does not want to be quarantined. He calls the County Medical In-

spector up on the wire, hoping to save himself from any trouble and all the while hoping to save the family from quarantine. You will find the same thing in diphtheria. The doctor is using diphtheria antitoxin, calls up the County Medical Inspector and says "I don't believe it is diphtheria,—I am sure it is not,—but I used antitoxin to be on the safe side."—"Shall I come down to see the case with you?"—"Don't come down."—He is doing that to protect the family. I have gone down and taken swabs and by speaking to a member of the family, have learned that he wanted to please the family and not have quarantine established. That is a very common trouble we have, especially when the family has a dairy. The doctor is afraid to displease them. Ultimately the family will become displeased because he is not honest. If not honest with the State Department of Health, I believe an intelligent housewife will have less faith in her doctor than otherwise. We have a certain percentage of families in a certain section of the county where the doctor is guided by the families and householders. All are down on quarantine placarding and he knows that they continue this style of discussion of all quarantine matters and he begins to criticise the Department of Health. He does it so frequently and it become so natural to him that he finally believes it. You find this in the portion of the county where the intellectual standard is not so high as in other parts.

Gentlemen, be frank with the members of the medical profession in the county society, I have them with me to-day, as I have had for three or four years. Be a leader of thought in your county society. I go to them, tell them everything and tell this man he must do this and that man he must do that and I get coöperation.

DISCUSSION.

Q.—What percentage of cases do they fail to report and conceal?

A.—Possibly ten or fifteen per cent.

I found that the bulk of the physicians want to do the right thing and for those who don't, we have a Board of Licensure which is perfectly willing to take their licenses from them.

The County Medical Inspector should be an active member in the County Medical Society.

Q.—Dr. Butz. Do we understand your personal relations and individual relations are good now?

A.—Yes, for the last few years.

Q.—Do these people understand now that the State is not absolutely arbitrary? Do they understand that the State is with them and wants them in the game?

A.—They are ready to support the County Medical Inspector, if he is frank with them.

If you get your various organizations, the civic organizations run by various intelligent people, and if you tell them Doctor so and so did not report communicable diseases, that he had five or six unreported cases of diphtheria,—they might be a little unpleasant about it.

Q.—Are the majority of the physicians members of the County Medical Society.

A.—Yes, the majority. We have only 4 or 5 men, who are not members of the society and these are the men I am after all the time. They are out of the society for no good.

Q.—Don't you think it would be a good plan if every County Medical Inspector in the State would go to the County Medical Society and let them see into the working of the State Department of Health? I think a great many of the men of the various societies really don't understand what the State Department of Health wants to do for them. They imagine every board of health is antagonistic to them and I believe a great many of the physicians are under that impression. If they understood the working of the State Department of Health and that we wanted to coöperate with them, I think we would have less opposition in our counties. I think by diplomacy you may have coöperation; then smooth out conditions and accomplish a great deal. The County Medical Inspector should be at every meeting and special meeting of the county society. He must be one of the leaders of thought in the society and they will rally about him.

Dr. —————From the adjoining county, I know about Dr. Plymire and I know that he has been very successful. His strong point has been the fact that he has gathered strong men about him, but the point I want to make, is this, that his county publishes one of the most active journals in the State and Dr. Plymire through that journal has made himself good with the county; a very desirable thing.

Dr. PLYMIRE—I think it is time for the County Medical Inspector to make examples of the doctors who repeatedly disobey or evade the law. The County Medical Inspector uses patience, he does not harm anyone. When he has to deal with a man who is a curse to the State, he can get him, one way or another.

Col. MARTIN—The policy of the central office is plain. If he is not good enough to back to the limit, he is not good enough to keep. Moreover the Department is prepared to send County Medical Inspectors, paying their traveling expenses, for such special courses as may better fit them for their work. This holds true also in regard to our nurses.

COUNTY MEDICAL INSPECTORS AND LOCAL HEALTH BOARDS.

Dr. C. B. Wood, Monongahela.

Now the subject that is given me, is how to treat the local health boards; and our relation to them. I have certainly had some experience. Last winter during the influenza epidemic I was threatened with arrest for daring to start one of my seven emergency hospitals in the State Armory, but I have always tried to be diplomatic, to explain the purpose and object for the prevention of sickness and the saving of lives. On my own initiative, I have gone before councils to talk on this subject. I have frequently been invited to address chambers of commerce and city councils. I want to give you a clue I have used with success. In our county everybody is pretty busy and no man has time to consider anything of this kind, every man wants to make another million in another minute, so some years ago, I got on this policy of putting it on a basis of dollars and cents. They have had some experience with doctor's bills; tell them what it costs. The child has a value; he is going to be able to earn money after while. Try that basis.

I want to relate one or two experiences in which I met with objections. One was in connection with the making of a sanitary survey in a first class high school. I introduced myself, stated my business, but the teacher said he had no time for any such thing, he was hearing a recitation. I argued and implored awhile and he finally consented to take one of the classes to another room and as I proceeded to work, I had to go to that room. He began to make unpleasant remarks about me and my assistant to his class; my assistant who knew him demurred and that was followed by a threat to throw me out of the window. We are not always received well in school rooms.

Another experience. A family refused to have the house disinfected after communicable disease and I was called and in the company of a health officer went to the place. I was just about to open the gate when I heard a command, not to dare to open it. I raised my eyes and tried to persuade that female to let me in and have the health officer disinfect that house. Then I made my break. I told her it would not hurt her house but rather add to the *cleanliness* of it. At the end of it all she was compelled to pay fifty dollars in court.

The whole thing rests on the education of people, education, education all the time and I am happy to say I have been accomplishing things along that line.

In another model County Medical Society, that of Washington County, the late Dr. John B. Donaldson of whose work for county societies you all know, and I decided that we were going to have a campaign on tuberculosis. I put the proposal before the society, proposing to district the county and to ask members to talk on tuberculosis. That was done; the members entered into it willingly. Nearly 5,000 people were addressed on the subject of tuberculosis. At that time I wrote a letter to the county superintendent of schools asking his co-operation and asking him to announce this campaign

of ours before all of his school teachers, so that they might be prepared to assist us to the best of their ability. He didn't do it. I suppose you know this county superintendent business is ancient history now. From my experience, Pennsylvania would be better without them. Now I propose this winter to go back into that county institute and also into the annual school meeting, as they ought to be informed of the great value of medical school inspection. I can see good results from medical inspections. It is slow but it is coming and we must not give up.

In a certain town of 10,000 or 12,000, a third class city with the commission form of Government, I have been invited to speak before the commission. We have no board of health, and the commissioner who has charge of our public health interest does little or nothing. Now I am going home and ask all the organized bodies of women; I don't intend to ask one man. I am going to get them and am going to see what I can do. I am going to tell them the new era in the prevention of sickness. I am going to turn the women loose on that commission.

Whenever a family saves up two or three hundred dollars, it goes into an alleged dairy business. I have closed a lot of these alleged dairies; one of them I am going to describe. The floor of the kitchen was so dirty that it looked like a slaughter house; there were a hundred chickens running around, all kinds of waste was thrown outside the kitchen door and these people were selling milk to a modern mining town near by. They did not sell any milk after my investigation. I asked the woman whether she had any caps and where they bottled the milk. She got the caps out of an old dirty box. There were a million flies about.

Marianna is a model mining town, with two story brick houses, shade trees, hot and cold water and everything needed for the men. It was built on that plan but a landslide broke the sewer line, resulting in the contamination of the water supply and we had a horrible typhoid fever epidemic. After that cleared up in a way, I was asked to take charge of the town. There was a bath room in every house. The miners used the bathrooms for coal bins. I had charge of the town three or four years until a great disaster began to cause financial reverses. I myself saw one hundred and fifty men brought up out of a mine with one survivor. One disaster after another took place. I had the town clean when in charge of it. I re-organized the health work in the schools; had the children interested and gave them the proper instructions.

I want to repeat that it is education, education all the time and all the time; keep everlastingly after it.

SUGGESTIONS FOR INCREASED EFFICIENCY IN COUNTY

MEDICAL INSPECTOR'S WORK.

Dr. C. H. Witmer, Lancaster.

One of the first things that we learned upon arriving at Mont Alto was that we belong to a great team, and the second thing we learned was that the fellow who could pass the buck was the wise guy. Dr. Hull has given me a question here that he has been trying to have solved.

All the problems that have been discussed by the men who have preceded me are a part of the question I am asked to solve, for increased efficiency.

One of the first things I have to say is this; we as County Medical Inspectors or Dispensary Physicians who are not in accord with our County Medical Society should begin to-morrow to set ourselves aright. I am sorry to say that I know of men who are working for the Department of Health, who are not members. In the second place; after we have set our own houses to rights, the next thing is to begin the organization of this team, and it can be organized in one of several ways. I am firm believer in the thoughts that Miss O'Halloran expressed, that the nurse has a great deal to do with this team. We have two splendid nurses in Lancaster and we are using them and expect to use them along these lines. We have, as you have in most of your counties, the Red Cross, Social Service Workers and several Emergency Aid workers. Now can't we through all these organizations, by the help of our State nurses, so train these workers that they can do a great deal of service not only for the Department of Health but for our own city? We must do it. This is going to help to solve that big problem, the follow-up work in school inspection. I have found the same defects in children each succeeding year, simply because the parents passed the notice into the waste basket and nobody called around to see whether little John had his adenoids attended to or not.

If through our State nurses we can effect an organization with all these different local organizations and get them to follow up the work in our communities, our county medical inspection is going to amount to something.

Another thing which would increase our efficiency is a closer relationship between the County Medical Inspectors and the Boards of Education. We are hampered a great deal at times by the fact that an epidemic has gained headway in the school room long before the Medical Inspector or Department of Health has ever heard of its prevalence. We never know of the epidemic until one-half of the pupils are down with the disease; then we get into the field and try to end it by closing the school. If there is closer relationship between medical men and boards of education that problem can be met by having at our County Teachers' Institute or Directors' Institute, talks on health problems, the health law, and the education of the teacher in the prevention of contagious diseases in the school room. Thus we will prevent many serious epidemics. The teacher may take this attitude; that she does not want to offend her patrons. The answer is that she is violating a law, that she is not doing what she should do. I think that we can overcome that difficulty.

One thing that will help us a great deal is to have all morbidity reports come to the County Medical Director.

Often times an epidemic in the rural section will have its origin in a borough adjoining the township. The Medical Inspector has no jurisdiction in that particular locality and because we, in Lancaster, are not in touch with Elizabethtown we don't know what is going on. We hope by the proposed changing of the machinery that we will be able to overcome that difficulty.

You men know that the law in reference to the reporting of communicable diseases only covers the physician. If you are treating a case of communicable disease you are held responsible for the reporting of that disease, but if a case of communicable disease exists in a house without a physician in attendance there is no come back. A great many communicable diseases, particularly measles, begin in the homes where they have no physician in attendance. Children are often kept out of school for three or four days without the teacher ever asking why John was absent and the next thing you know we have an epidemic. I hope that we can prevail upon the Commissioner and the Advisory Board to make it obligatory for the family to report eruptive diseases.

One great problem that confronts all Medical Inspectors, is the better sanitary inspection of our dairies. If we can coöperate through the Dairy Division of the Department of Agriculture we will find some plan of getting the cleanest and best milk the dairies can produce.

From the standpoint of administration, I believe that the County Medical Director is the Chief of the Dispensary whether it be Genito Urinary, Tuberculosis or Child Welfare. The Medical Director is going to be the guiding mind of all dispensaries and must have the coöperation of the physicians and nurses and the coöperation of every civic agency in his town.

Col. MARTIN—Under our broad powers we can do nearly any rational thing having health as its object. As Witmer says if we do the right thing, we have the people back of us. By local ordinances the sale of milk may be controlled in any municipality. These local ordinances should cover clean milking by healthy people, prompt and continued cooling and clean bottling. Thereafter training may be needful to many parents ignorant as to the proper care of milk after it is received. Clean milk, pasteurized, affords the only absolute safety against milk carried diseases. Model ordinances and the technique of a simple inspection will be sent to you.

Dr. BUTZ—We charge \$1.00 for every license in Allentown. We have all the milkhandlers examined and they must show Health Certificates before they may handle milk. This year we are going after all the farm help. Thus far we have only taken the people who handle milk after it leaves the farmer, but this year we are going to get the others.

COUNTY MEDICAL INSPECTOR AND SCHOOL INSPECTION.

Dr. J. T. Butz, Allentown.

I would like to start out by making the statement that any County Medical Inspector, who has not examined any schools up to this time should make an inspection of one or more schools this fall. There are many points that come up in the County Medical Inspector's work in reference to school inspection and if he does not do the particular work himself he will not be able to advise his other school inspectors. I find nothing more difficult than to go into a school and have patience and proper tact to examine pupils. Now the time will soon come when we will be asked to recommend or suggest some names for inspectors and I think it is the duty of County Medical Inspectors to get men who are willing and interested to sacrifice a little time for the community and the State Department of Health. Usually this question arises when I ask a new man to make inspection. How much pay? What am I to get? Well, I explain what the rule is. Then he may do it the first year and later come along and say "I ought to have more money; I have to pay more carfare and down here I have a school with fifty or sixty pupils and it does not pay me to go out and inspect it." The only thing I can do is to tell that man to go down there this year and make his inspections and report it to the central office; then to go and see the County Superintendent and School Directors and tell them there are too many pupils in that school; which is generally the case. See if they don't want to make two schools. Then you have covered the question of your remuneration.

When you find that many of the pupils won't come out, it is very often because the teacher is not in sympathy and because the parents have told them that the inspector has taken away some of their personal liberty. As a rule I don't bother much about absentees as they are so few. You cannot do much with them when the parents have instructed them not to come out. The thing to do there is simply to try and follow up and when you get in that particular locality to stop at that pupil's house.

I got into one school where the teacher was opposed to medical inspection and I certainly experienced some trouble. The best thing to do is to try to get the school teachers interested and, if you can, to get fifteen or twenty minutes at a County Institute in which to speak to the school directors, who have an annual meeting, and tell them of the value of inspection. You will find that a lot of people in the rural districts spend a lot of time and money on their cattle but often put the child's welfare off until the last moment.

I have a number of little charts in sets. The charts are furnished by the American Medical Society and are by Dr. Wood of New York. The ones showing enlarged tonsils and decayed teeth, I take along and when the children get interested in them I have very little trouble in making the inspection. It requires tact and patience. Another point in reference to meeting your School Inspectors; I think it is a good plan to meet them at the County Medical Society Meeting, noti-

tying them that you will be there and asking them to be there. After the Medical County Meeting have a little meeting with them. I also find that the School Directors are at fault in many cases of unsatisfactory school inspection.

In the course of my survey I may find that they do not have the proper toilet or proper screens. I come there year after year and find this condition uncorrected. Those men really don't know their responsibilities or duties, for at the end of each year they are supposed to take oath that all sanitary conditions have been taken care of. They sign the report and send it in.

I think it is a very good point, especially since we know so much about the teeth, to teach the children just how to use the tooth brush.

Tell them about the proper ventilation at home. Unfortunately we find that in rural districts people do not open their windows at night. We must try to educate them to the use of fresh air.

I have found in the rural districts that it is better to use the word "rule" instead of "law."

Reporting of contagious diseases; I recall that a doctor in Allentown called a little eruption or rash, as "war-bread" rash; it was the beginning of a bad epidemic of German measles. It is very difficult at times to diagnose these different diseases, but when you have four or five cases in a school, you may be sure it is not a "war-bread rash" or "tooth rash," which certain doctors diagnose to avoid quarantine.

DISCUSSION.

Col. MARTIN—Your troubles through lack of coöperation are over. There is a man named Finegan, State Superintendent of Public Instruction. He is with us. We have his entire co-operation. The central office appoints the school inspectors, usually at the nomination of the County Medical Director. It is important that the County Medical Director should know the ability and energy of the school inspector. He should make one inspection with the school inspector.

Q.—Do you think it is a good thing to have few or many inspectors in a county?

A.—It is a good thing to have a few, well trained to their work.

Q.—Do you think it would be a good thing to have scales for weighing in each school room?

Col. MARTIN—Fine. You are going to get them.

Miss O'HALLORAN—Going back to the number of inspectors; I should say that many of our counties are so highly rural and hard to cover that one doctor has too many schools to inspect.

If the school inspectors could start out as soon as the schools open, that is if the supplies were furnished them earlier, much more could be accomplished. When the roads begin to break up and a man has to drive out fifteen miles, it is a day's job to examine six or seven children and many of the better men do not care to do it.

Col. MARTIN—The supplies will be sent out earlier.

Dr. BUTZ—We have only one township in our county which has not had school inspection. I am sorry to say that they have a medical man on their school board who is opposed to school inspection and that we have not been able to get it through. This year the new law will bring him around.

Too many physicians are ready to give certificates without having seen the children or persons to make sure that they have produced a successful vaccination.

Col. MARTIN—The new vaccination law, about which Mr. Myers spoke the other day, cures this matter. I don't know whether he mentioned that particular clause or not but hereafter a physician may not give a certificate of successful vaccination until sufficient time has elapsed to be assured of it.

THE COUNTY MEDICAL INSPECTOR AND STATE NURSES.

Dr. J. S. Miller, York.

In August of 1907 I was called to Harrisburg and made a County Medical Inspector. I had no instruction at all when I reached home and I supposed it was a proposition whereby you continued to draw breath and salary, etc. It didn't take me very long to find out that I had accepted a real position. The first thing I had to run up against was the people as we find them, who thought that everybody that had brains didn't have M. D. or other title to his name. I found people that knew something in all walks of life. In looking over the doctor's situation, as we have to do with the doctors if they do not report contagious diseases, I found them a pretty good class of men. There are a few who have gone astray, not because they intended to but because certain habits have interfered with better plans. Even with these men you may be able to do something if you will just take a little trouble.

A county medical inspector must possess tact. If he is going to carry pistols in his hip pocket and is going out into the country, Harrisburg will have no end of trouble. We have to go among the common people just as the doctor does. The greatest trouble we have is finding out where the diseases come from and it may be necessary to investigate in a bordering State or county. My county is bordered on the south by the state of Maryland. We are supposed to report to Harrisburg the source of disease. You can't expect the doctor to go to another state or county to find the cause. The family doctor don't do that but as a rule you are the one to perform that duty in finding the source of the disease. Now, just to give you a little understanding of the matter I will say that last year we had smallpox in our county; about forty cases: It broke out in two distinct parts of the county. One man was before the draft board and three days after he left York the case was reported as chicken-pox, but the difficult matter I had was to tell where he got the smallpox. There was another case reported just outside of York about the same time. Finding out the source was a big undertaking. I traced the source of one to Baltimore, where I went to see the Commissioner of Health, and the other I traced to Dauphin County; two different sources bringing smallpox in at the same time. After I had found out where they came from the next thing I found was that both these people who brought smallpox into York County had been vaccinated by doctors. One carried a vaccination certificate. He had been vaccinated ten years before. I examined the man but could not find a scar. That is where one doctor had gone wrong. I might have gone a lot worse wrong than the doctors, had I not examined the patients.

Modes of Securing Information—We ought to know about everything that is going on in our district. We ought to know all about picnics and entertainments. We ought to have efficient health officers and not very many of them. Very few, indeed, so as to get in communication with them from time to time.

We want health officers who will work and report to us, and assist us in tracing diseases. It is not pleasant to report a contagious disease to Harrisburg stating in the column asking the cause, "don't know." We are not expected to do that. We have a burden, a big burden, the public health of our district and we had better pay less attention to following around brass bands or seeing our names in the newspapers. Do your work first then let the newspaper tell the people. Be a silent man. Just as soon as you let it be known that you are going to investigate something, even the doctors will get ready for you and the inquiry will have to be handled very carefully. I have had a dog sent after me and have had the door opened just so far, but of course I have a foot. I have been obliged to go as often as three times before I got in. The time to keep your temper is when the people turn on you. I would like to emphasize the matter of giving us good men for health officers. I have one man that can't hear. I can't get along with a man of that kind. He is inclined to be tired. We want good men.

DISCUSSION.

Col. MARTIN—We have seven hundred men we appoint ourselves. I think we can make the job worth while and we can always get rid of poor men and that is one of the things the new County Medical Inspector has to do; to notify us when the health officer is impossible, and we will try to find some one who is better suited for the work.

Dr. Miller succeeded in getting an appropriation in his county for milk for indigent patients.

Q.—How can we make our State nurses more useful to you in your work?

A.—I don't know. I have not thought about that.

Q.—Where we have an inefficient health officer would it not be a good thing to try out one of our nurses as a Health Officer, making her a Health Officer if necessary?

A.—I think that would possibly give her too much authority. A woman does not need authority, what she needs is to be on deck.

Dr. MILLER of Montgomery County—There is a point which we have overlooked during our schedule here, which is important, and which I have been asked to bring before you this afternoon, and that is the education of the student nurse upon health items. All our medical schools have a course in public health for the student doctors but our training schools have no such instructions for the student nurses. I shall establish it in our training school at Norristown. I will bring this point before you for suggestions. It should be taken up vigorously at once.

In a great many hospitals in the State the public health course is included in the course of study. We will try to have it included in many more.

THE COUNTY MEDICAL INSPECTOR AND COUNTY ORGANIZATIONS.

Dr. C. R. Phillips, Harrisburg.

If we have gotten anything out of this camp, one of the things is the necessity for coöperation; coöperation throughout the county in all your health work and extending into the County Medical Society.

Referring to the County Medical Society: It is, of course, the duty of every county medical inspector to be an active member of that county society. I take it for granted that you all are active members of your county society. What are some of the things we can do? In that modern County of Dauphin, the county society several years ago took action to establish an Anti-Tuberculosis Society. That society, led by some of the bigger members, organized a milk commission, and, as a result, we have certified milk. It can be done in any county society. All you have to do is get men interested. You can have a mental clinic, and if you do get a mental clinic you will be interested in it. The County Medical Society ought to have, several times a year, meetings to which are invited, from the outside, members of this State organization. In Dauphin County we have been able to secure one or two papers every year, splendidly prepared, and both interesting and instructive, from our State organization. If you are having trouble, with your programs, I would suggest that you get occasional papers from the men of the large cities who have large dispensaries and work of different kinds. It is certainly a very simple thing to interest the society by getting papers from the outside. These, it seems to me, are some of the important things we can do with our Medical Society. We meet on the outside this type of professional men:—He has also been referred to, this morning—he will think that he has a case of diphtheria, up to the point of ordering antitoxin. He will probably tell the family he thinks it is a case of diphtheria, but he is not sure of it. He may call up the County Medical Inspector, and he may not. When he does, it seems to me that we ought to put him on the defensive; make him prove, by one or two swabs, that he is not dealing with a case of diphtheria. We should use antitoxin when in doubt.

I had the following experience in the last month; a physician had a case of sore throat to treat, and the child died. He gave as the cause of death, on the certificate, some other disease than diphtheria. During the time he was treating that child, he got a telegram that a child with whom the child had been in contact three or four days previously had died from diphtheria. A Health Officer and myself prevented a public funeral. A few days later this physician was taking care of the mother of the child who had died. Upon my arrival, I found that the physician had administered antitoxin to the child and had not reported it as diphtheria, and he was treating the mother for a "sore throat." Upon examination, I found that she had a typical false membrane, yet he was in doubt as to whether

he was dealing with diphtheria. We quarantined that house. I would suggest that where they use antitoxin and call us up, we should make them prove that it is not diphtheria; and not let them off as easily as we have been. Further; Don't you think we should prosecute a doctor who has a case of that kind and then says that he was in doubt? I don't think ignorance is a barrier to prosecution. We must be careful—we must get witnesses who will substantiate things told to them in the homes. That is one of the difficulties in prosecutions. In the case recited if we had been able to get the people of the home to swear to the things they told us, a clear case of diphtheria could have been proved without laboratory evidence.

DISCUSSION.

Q.—Referring to the subject of "Sore Throat," would you advise prosecution in a case such as you recited in the absence of the swab?

A.—Yes, in that particular case.

Q.—You had telegram in your possession?

A.—The Health Officer, when he saw it, got a copy of it.

It is not simply the little doctor around the corner who does not report cases, it is the big fellow on the main street that violates the rule quite as frequently. One was attending a case of diphtheritic croup, had administered antitoxin; they dismissed him and called in another doctor, who reported the case. The Health Officer immediately swore out a warrant for the first doctor. He presented three other doctors, who said he was perfectly justified in using antitoxin, as he had used it as a preventative and that it was impossible for him to diagnose the case positively. The case was dismissed.

I feel that you should not prosecute a physician unless you have absolute proof that he has violated the law.

Another physician, an old family physician, had come in as a consultant and made a diagnosis of diphtheria in this case but the attendant physician refused to accept it.

THE COUNTY MEDICAL INSPECTOR AND NUISANCES.

Dr. S. H. Iams, Waynesburg.

I have not been up against the nuisance problem very often. We had more or less of an understanding that nuisances were to be taken up with the central office. I remember a policeman who was a health officer in our district, and I think it took seven telegrams to get permission to clean up a nuisance. A hog had died on the roadway. About the time the health officer received permission from the property owner to remove the hog, as it had died beside a stream, it floated down to the next property and so on until we finally got a telegram, telling us to get the hog wherever it might be and bury it.

The hardest thing we have to go up against with a health officer is the question of who is going to pay the bill?. The problem is always such an instance as I have mentioned and it is hard to get track of the responsible party. I feel most of these instances are better handled by tact and plenty of that free sugar stuff. You have to get out and make investigations among those interested on both sides, both for and against.

One of the biggest nuisances in our county is "doctors." We have one doctor who is a confirmed nuisance. He is a "vaccination expert." Last year he vaccinated three hundred, approximately, and I learned in a roundabout way that he was issuing certificates that were perfectly legitimate; stating he had "satisfactorily vaccinated" Joe Smith and had signed his name to it. I went to see him. They were State Department of Health certificates. As the school teachers had the certificate, the parents were satisfied that John was vaccinated. He also gave them pills. He used a remedy guaranteed to prevent smallpox. He gave them three pills to take every night for three nights. After this they could not get smallpox. I hope we can catch that individual.

Now another nuisance is the doctor that has been referred to so often, the man who refuses to report diseases. He is the president of a bank, he loans money to all and is highly thought of, but he will never report anything. Last year I found out he had two deaths in one family, and I reported that he was not reporting typhoid fever. I also found that the sewage was being directly returned to the water supply. The Health Department wrote asking for the name of his attorney; that did not scare the doctor at all. The attorney received word that the doctor was to report his typhoid fever cases or we were going to prosecute him. The attorney then took the matter up with the doctor, who wrote a beautiful letter (of which I had a copy), saying he had never in his life failed to respect law and order. It went through all right and he was never prosecuted.

I had a case sometime ago where a traveling band of gypsies bought up a lot of dead horses and animals, taking the flesh from the bones and putting the bones into a car on the siding, to be shipped away. The neighbors came into my office in a flock; they could not

stand the odor. The situation was very hard to remedy because the men who had sold the skeletons had gone on their way, the men to whom the bones were consigned lived near Pittsburgh and the railroad people stated that they were not responsible. However the health officer got into his Ford car and brought the gypsies back and we had the stuff unloaded, and properly burned, buried and taken care of. It was a hard situation to handle for a few hours.

There is another medical nuisance. I got a report that the death rate in our county from tuberculosis was extremely high,—too high per capita. I took up a little personal investigation and found that three or four of our doctors were reporting other diseases as pulmonary tuberculosis, as they found that when they put on “pulmonary tuberculosis” it was never returned. Our death rate increased very much after they found they could get away with “tuberculosis.” Reports are now often returned, so our tuberculosis death rate has decreased very much. Now nearly everyone has influenza!

I think it would be a great thing if setting-up exercises were established in all our schools throughout the county. Have the children all come out on the lawn and get fresh air in their chests for fifteen minutes. I think an organization of that kind in all our schools would be perfectly wonderful. I was wondering if it would not be valuable to work from the educational side and have something sent out through the superintendents of the schools, for this movement.

Colonel MARTIN—This will be done.

THE COUNTY MEDICAL INSPECTOR AND THE CENTRAL OFFICE.

Dr. H. C. Frontz, Huntingdon.

Colonel Martin, Ladies and Gentlemen: As I see it we represent all the different divisions of the State Department of Health, and it seems to me that a doctor has to be a pretty well rounded man to do it. When you think how large this Department of Health is it looks as though a man has to be on the job all the time. We first attend to all the general program of the department; we represent the Commissioner of Health in our respective counties and there are many times in the work of the County Medical Inspector when he is called upon in a general way to explain things about the Department of Health, not particularly upon communicable diseases but as to what the State Department of Health is doing. We are sometimes called upon to act as representatives of the Department of Health at meetings and to make short talks. We do not have to communicate with the general office except in cases of smallpox. I think every man that diagnoses smallpox should be questioned; where the case is mild we have to call upon someone for the moral effect, and to ask someone from the central office to help make a diagnosis. I think most of the inspectors have had sufficient experience to diagnose a case of smallpox.

There are some unusual diseases that occur occasionally in every county, and, of course then we must seek help; and it is always freely given. As I am not located so very far away from the central office I use the 'phone as a quick method of getting help.

There are times, in looking over our records, when we find a good many cases of tuberculosis in a certain locality. Stop and consider why there are so many cases of that disease there. It is a matter of interest and importance for the central office to know these things. I want to relate to you something that happened in a small town with 50 cases of tuberculosis among 300 men. In that town they have a glass sand works, and in one of the companies engaged in that particular business we found that out of 34 cases, from this particular county, 28 of their men died; a frightful mortality. I had Miss Black get the record of other industries of similar character; the central office took action on it and sent word to the different companies relating these facts, explaining the reason and what they could do to remedy conditions. That is one of the things we, as dispensary physicians do; we should be on the alert to find out why we have so much tuberculosis.

We must ask the Engineering Division to send us engineers to ferret out certain conditions which only an engineer can do; and, I might say that whenever an engineer has been sent he has always been very active and looked after Huntingdon County in a very satisfactory way.

We are in direct touch with the Division of Supplies; all of us. I am impressed with the fact that many of the practitioners in any given county know very little about getting blanks from the State

Department of Health, for reporting communicable disease or getting the proper form of vaccination certificates, and I frequently have doctors call on me and ask me to give them some.

The Laboratory Division is not so well known. We have a few doctors in Huntingdon County who don't know anything about it. They were surprised when I told them they could have such and such a specimen examined free of charge. It is necessary of course for the Medical Inspector to educate them concerning things along this line. The laboratory has been a wonderful help to me and men should be acquainted with these facts.

In regard to the Division of School Inspection;—I think we will be called upon to act as referees as to diagnosis in some of the medical inspections made. I want to relate an incident that happened in our county where some rather heated correspondence took place between the central office and an inspector I had reported. They tried through the correspondence to tell the doctor of the errors of his ways and he "came back" and they referred the letter to me. I called at the doctor's office and tried to show him the error of his ways, but, unfortunately he had written a very caustic letter to the department. My rule in regard to communicating with the central office is the "safety first" idea. When I am in doubt I get in touch with the central office and get help freely and promptly. There are questions that come up in the minds of all of us and the central office is willing to give us the help when we ask for it.

Col. MARTIN—Referring to your remarks about the heated correspondence; that requires two things, fire and fuel, but our work is too big and we are too busy to have any more heated correspondence.

Col. MARTIN—We propose having you county men exercise some supervision of our biological products and their proper distribution. They are meant for the people of the State who can't afford to buy them. A man with a family who is getting less than one hundred dollars per month is entitled to free biological products.

Dr. FRONTZ—I think that is a good thing to know. In Huntingdon County we have had men apply and they had to sign a blank stating that they are receiving antitoxin for an indigent person. I will now tell them that they may receive it for patients with family incomes up to one hundred dollars per month.

EPIDEMIOLOGY AND VARIOUS REPORTS REQUIRED BY THE MEDICAL DIVISION.

Dr. H. L. Hull, Chief Medical Inspector.

The Commissioner's plan is to have a County Health Council, preferably three physicians and two non-professional men or women, active and leading citizens and I wish you would start now to think of men in your county who would be suitable and who would be willing to take such positions—positions which would be analogous to the present Advisory Board of the Department, appointed by the Governor and approved by the Senate.

This County Advisory Council is provided for you to consult on matters involving policy and to help you in driving that policy. In times of epidemics it will be valuable as a means of consolidating the efforts of the different sections of the county; it will give you an idea of what to recommend and provide you the backing of the community in your county work. Among the doctors, I would suggest that those who have previously been in the Department of Health and have left it honorably be considered as the first choice for appointment to this County Advisory Council; you might pick out a prominent attorney and a prominent merchant as the two laymen and three good physicians from various parts of the county—men whose judgment you can rely upon and who should be a source of support and advice to you. Public spirited women who have shown their executive ability in war work are particularly desirable.

Reports to the Central Office:

Now I want to speak of reports to the central office. Following this camp we hope there will be less central office work. It is proper that the work of each county be centralized in the county medical inspector. One thing that has been suggested, which I think will go through, is the matter of having all reports from the local boards of health go to the county medical inspector. It is a waste of time to have the reports come in to the central office and then be sent to the county medical inspector; if he does not get these reports from the local boards of health he does not know which boards are not reporting.

Now there is just one serious bar to the carrying out of this project—there are some of our county inspectors who, for some reason or other, are very slow about answering letters and who are sometimes unnecessarily slow about approving or disapproving health officers' reports. If we change our policy and you don't change yours, these reports will be delayed in your office and we will not receive them for two or three weeks. It is absolutely necessary that these reports be not delayed. I recommend this proposition but its successful application lies entirely with you. We must have correspondence attended to promptly.

Rendering Reports to the Department:

Just a few words about rendering reports to the Department—first of all, we get three kinds of reports: First, there are the reports that are so brief that all we know is that the county inspector made a trip into the county; it does not mention the disease, the name of the person, or what his findings are.

The second is the highly detailed report, written in a hand that is not easy to read, which takes too much of our time, and is not what we want at all.

The third is the kind of report we want—a report giving all the essential facts in brief.

Telegraphic Reports to the Department:

Sometimes one of our inspectors makes a special investigation somewhere on Friday afternoon. If he is in the western part of the State and writes to us the letter reaches Harrisburg sometime Saturday afternoon and unless it is a special delivery letter we do not see it until Monday morning. If there is anything important that occurs in your county we would like to have a telegraphic day letter or a night letter. A special delivery letter reaches us promptly, as a rule; but we want telegraphic reports on smallpox and about disasters occurring in your county—floods, explosions, etc: If you are not too far away, telephone us the facts; in this case, the department wishes the charges reversed, as we do not have to pay war tax.

Always follow up a telegram or telephone message by a letter briefly confirming the facts, so that we may have it on file. Keep a carbon copy of every letter you write to us; it is desirable for that and other reasons that your letter be typed as it will save time, ours and yours.

In the case of violation of quarantine, telegraph or telephone to us: do not wait until the person gets so far away that we cannot reach him.

There is one report that you have not been very prompt in sending to us and that is Form 57—the monthly report. You must keep a record of all your work. We want your monthly report and your vouchers before the tenth of the month.

There is another report that some of you are not familiar with: that is the Annual Report. We want an annual report in which you will cover the high spots in your county during the previous year and you can get this report from your Forms 59. The only way that you can be alive to your position, and your position from now on is going to be a live one, is for you to keep your records in such shape at all times that at the end of the year you will be able to get from your Forms 59 the interesting facts for your annual report. Tell us of any epidemics; cases of smallpox and where you traced them; any disasters; etc. We will try to give you the first three months of the following year to prepare it.

If you do not keep up your Form 60 (your quarantine account with health officers) you will not know whether or not they are releasing cases from quarantine too soon.

I was surprised to learn that some of our county inspectors do not know just what to do with Forms 36 and 37; the Form 36 is for

placarding and the Form 37 for disinfecting. He should take a record of them and send them to the central office.

In the matter of approving health officers' daily reports:—if he makes a trip at the order of the county medical inspector and sends the report to us and we return it to you, please let us have some action immediately; either approve and return it or, if you disapprove, give us your reasons.

DISCUSSION.

Q.—If we have a case of smallpox that may have been in another city, should we get directly in touch with the board of health of that city, or how should we report it?

A.—The indication is for immediate action to protect the community. Your central report is immediately important only in as far as it expedites necessary action.

The Commissioner will ask you for definite recommendations regarding health officers. If some of the present incumbents are rendering poor or indifferent service they may be retired. One thing we want to do is to eliminate the unfit health officers, enlarge the districts of the good men, and increase their earnings.

Dr. McKEE—Every inspector has had trouble with boards of health in his county. Would it not be better to have the morbidity reports sent directly to the county inspector instead of the health officers, and to have two or more health officers work from the county inspector's office? In that way, the county inspector would be in touch with all reportable sickness throughout the county.

A.—The plan by which this may be accomplished is being formulated.

Dr. ROGERS—I think the point we should try to arrive at is this: The county inspector cannot know too much about his county—he should know everything. We have a town about five miles from Pottsville—Minersville, and about a half mile from Minersville is a settlement of people called New Minersville with a population of eight hundred or a thousand people. During the recent influenza epidemic, a boy who had died from influenza was brought home from one of the camps. The casket was opened and covered inside and out with flowers. Almost everyone kissed the corpse and took some of the flowers home with them. In three days there was a terrible epidemic of influenza in that settlement. I was only five miles away but did not know of this until all but two of the doctors in Minersville were stricken and the disease was fairly raging. In five weeks, in a town of eight thousand there were 512 deaths. It spread over the county, costing us about two hundred and twenty-five thousand dollars; we had eighty thousand sick at the high water mark, with a total of 4,900 deaths in the county. If we had known something about it, we might have saved some of those people and some of that suffering. I think every county medical inspector should be in full and complete touch with his county.

Dr. Hull—(Explanation of charts showing endemic index of measles, typhoid fever and scarlet fever).

We are having these charts prepared for routine use in your counties so that you can figure out the prevalance of the diseases in your particular county.

In investigating epidemics, don't wait until you get an order from the central office before starting an investigation in your county. If in a city or borough, take up the matter first with the local health authorities.

When you hear of an undue prevalence of any disease in a certain place, give the local health authorities a chance; call them up and offer your services. If they are slow, go and talk over the matter with them. If they are incompetent and you can't trust them to handle the situation, report the matter to us and we will take charge of that work. Let us have your report quickly and if it is anything urgent, telephone or telegraph us, so that we may send engineers to go over the water supply and a medical officer to help you if necessary.

I would be delighted to have any suggestions and it is only by your coöperation that I can make a success of the work which the Commissioner has outlined for me.

THE NURSE AND TUBERCULOSIS WORK.

Miss Nellie Loftus, State Health Nurse.

What I want to speak of specially is one particular thing in visiting patients' homes. You ask "Why have you not been to the dispensary in 3, 4 or 5 weeks or months?" and invariably the answer is "Because I went there and there was nothing done for me." Whose fault is it? I think the nurse's fault. The more active we are the more busy we are. We have not time to go into every case, but it is our duty, I think, to ask just what is the matter in this case. She should just take the chart, which has always been fixed by our chief, and step into the office and explain to the physician the particular complaint of that particular patient. Then go back to the patient and state just what was done. Our dispensary has always been a regular public health clinic, not only for patients with tuberculosis, but when something else was wrong with them. The nurse refers the case to the doctor who takes account of all the circumstances and if necessary refers the case to some hospital or organization in the city. If the patient requires the attention of a specialist we first interview the Poor Director and have him ask the specialist if he will not give his time free of charge. In Luzerne County we have a perfectly wonderful Board of Poor Directors, they are of the very best type of men in the country, very intelligent and coöperative. I do know that they had a social worker in connection with their Poor Board for almost a year, but at no time did they ever question one of the State nurse's investigations.

There is one type of patient we meet, the patient that has always been intelligent and self-respecting. There may be a time when through sickness he is not able to support himself or family. It is necessary for him to go to a sanatorium and it is very humiliating to have to say to the nurse, "I need this or that but I do not have the money to get it." We have a society in our city that will take care of that particular type of patient. You can say to the patient that he is not accepting anything more from those people than you would accept if placed in his position. You may tell him that when he is well, he can repay us or give a donation to that particular fund, helping some other patient of the same class along.

I thought I noted a feeling of some uncertainty in regard to the relation which should exist between the chief of the tuberculosis dispensary and his staff and the County Medical Inspector. Am I correct in that? Is it clear in your minds? In the larger counties and in larger work there will be many cases where the County Medical Inspector cannot cover his territory; he will have to have a deputy and his choice of a deputy would naturally be from the staff of the dispensary. We want tuberculosis experts but we want them to be useful in all lines of health work. The deputy is a man with as full authority as the director himself, and with full authority given by the Health Department. In this organization of all the physical powers it is certain the tuberculosis men will join most cordially and effectively in the work of the County Medical Director. Without their full coöperation his work will be only partially successful.

NURSES AND COUNTY MEDICAL INSPECTORS.

Miss Alice O'Halloran, Chief Nurse.

Probably the County Medical Inspectors and dispensary chiefs feel that they would like to know a little bit more of just what the work of the department nurses will hereafter consist. In following out the program of general public health work, it will mean that the nurse in the first place, upon her return, will be compelled to ascertain the resources of her county. To know what she has to work with from all points. When she knows what she has at her hand, she will have to form her committees to work with her. The work will come directly under the dispensary man, who of course will co-operate with County Medical Inspector, and he will know how many department nurses there are in the county.

Just a few day ago in Cambria County, the people in one small part felt that they wanted to start a child welfare campaign. The ladies were eager. They wrote the County Medical Inspector asking for advice. He in turn wrote to me and asked for nurses. He had in his group of nurses the best in the State. I suggested that he send a nurse out to remain there, organize and start the work. Would that meet with your approval if you had just started a campaign in your county? Would it be a better plan to send a nurse from an adjoining county, rather than one that is acquainted with the district? Through our experience with the recent epidemic we have found that we might have obtained better results had each nurse remained in her district.

A nurse should know the people in her county and their characteristics. She ought to be able to have them assist with the work. It may be of assistance to her to have the coöperation of some other nurse in the field, but she should be the big feature in the community. We must have the support of the men. Here is a community where child mortality is very high. She wants your support and your help. She will do the work but she must have your suggestions and your support.

Physicians are not any different from nurses. There are some that are more active, more interested than others and some that have not the necessary time. Anybody in public health work must find time to be interested in the public health work of his county. What I want to bring out is that we must have and we want your coöperation. The field of the nurse will be a very broad one. It will include child welfare work, social diseases, tuberculosis work, sanitation and general health.

Now we can't have a force of nurses large enough to furnish every community with all the nurses that it will require in order to carry out a very successful campaign. We must have the coöperation of the laity. We will be able to work it up if we get your support. If a nurse calls a meeting to organize the people of that community and she has you there to do the talking and assist her, the people in the community will feel that they have some big support. Q. Will you do it? A. Yes. Q. Who shall call that meeting, the nurse or the County Medical Inspector? A. If the County Medical Inspector

calls the meeting she is to work with him in getting the forces together because the lay forces will be a big factor in the work. In rural districts the nurses will do a big part of the school work. We have one or more nurses in every county in the State. The nurse in Perry County has very poor railroad facilities but she will be properly equipped to cover the county. It would hardly be feasible in counties like that to have more than one nurse. There is work enough for two or three nurses but if the nurses in these counties will get forces of lay people together they will do just as much work as another State nurse.

I cannot do anything until I am in consultation with the County Medical Inspector. In every district you have a large group of very good women, Red Cross, Emergency Aid and various philanthropic organizations, willing workers, women who will work with you, if you will work with them by having them call meetings and having the dispensary men there.

People in various parts of your particular district will be eager and willing to help. One of the plans that I think the commissioner has had in view, is that the dispensary chief is to be the Deputy County Medical Inspector. He is logically the man that will handle that end of the county. As I understand it is not the desire of the department to tie a nurse up with an individual case. If it would be of help to the County Medical Inspector to have a nurse go to a home and teach the inmates in reference to quarantine or taking care of patient, she will do it but she can't tie herself up with individual cases.

There are always some people who need nursing care, who are indigent and should have it. Nursing is both broad public preventive work and individual work and when an emergency arises the nurses will step in. There is a very important question relative to preventive work. The most important factor we have to deal with is the school. I have thought for a long time that if I could take nurses who have had experience in contagious diseases and put them in districts where these diseases are prevalent and have them visit the schools and help the teacher to exclude from school those pupils suffering from these diseases. it would be a fine thing.

Any nurses with training can do an enormous amount of good work. For instance, in an epidemic of whooping cough could some nurse spend a day in that school it would be a small matter to pick out these children. Where there are school nurses I don't think our State nurses should be taken in to supplant them. Where we don't have them, I think you would be justified in sending a nurse in to stay there as long as necessary.

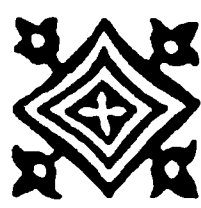
In other words the idea is that our nurses should only do the work that other nurses can't do. When our nurses return they will get in touch with every service and they will keep in touch with it. We will have a series of conferences as frequently as we can. All lines of social workers will be asked to the conference—we are going to work together. I think a great deal of our success lies in the way we handle our work and take things up with others. I think we all have the vision. The last week we had a number of men from other states address us and they always referred to work in some other state. In the future when they talk about public health matters they are going to refer to Pennsylvania.



MENTAL HYGIENE AND PUBLIC HEALTH WORK—Norbert J. Melville, M. A., Public Charities Association of Pennsylvania.

MEDICAL INSPECTION AND MENTAL CLINICS—Dr. Isaac Willetts, Psychiatrist, Germantown Hospital.

MENTAL HYGIENE—Major E. D. Bond, Professor of Psychiatry, Graduate School University of Pennsylvania.



MENTAL HYGIENE IN PUBLIC HEALTH WORK.

By Norbert J. Melville, M. A., Special Secretary, Public Charities Association of Pennsylvania.

(A summary of a series of lectures delivered by Prof. Melville during the first and second Training Camps for Doctors and Nurses of the Health Department of Pennsylvania, held at Mont Alto, Pa., June 22nd to July 2nd and July 6th to 18th, respectively.)

Introductory Note—A brief history of the development of the Mental Hygiene Movement, with special reference to Pennsylvania, preceded the presentation of the statements and remarks in the following summary.

During the past year the Mental Hygiene Movement has received a strong impetus, growing out of the work of the psychiatrists and educational psychologists in the war. In Pennsylvania, the movement has recently taken two main directions: One, toward the establishment of what may be termed coöperative mental clinics, and the other toward the passage of an amendment of the School Code, requiring the establishment of special classes or special schools for all types of handicapped school children, with special State aid for school districts that provide such special education.

The function, organization and operation of these mental clinics, or mental health centers, can best be understood from a careful study of the chart before you, of the literature in your hands, of the lectures and demonstrations being given during the camp, of the psychometric examinations being conducted daily in the children's building, and of the demonstration mental clinic which Dr. Klopp (in second camp, Major Bond) and I, with the assistance of social workers, will conduct at the close of today's lecture.

During the past year such coöperative clinics have been in operation in Philadelphia, Reading and Harrisburg. Dr. Phillips, who is here and whom you all know as the County Medical Inspector of Dauphin County, is chairman of the Mental Hygiene Committee of Harrisburg. He will later present a report which shows the extent to which his community has availed itself of the services of the clinic.

Where the services of a neuro-psychiatrist have, for the time being, not been available, we have established pre-clinic stations as, for example, in the city of Chester, in West Chester, and in certain parts of Philadelphia. At these stations, general medical, psychometric, and educational examinations are either made or arranged for, case histories are taken, and such medical and social investigation and treatment are recommended as can safely be attempted in the absence of a psychiatrist.

At these pre-clinic stations, no mental diagnoses have been made, but much general medical, educational and social help has been given. It is hoped to convert, as rapidly as possible, such pre-clinic stations into complete mental clinics, each to have the services of a

psychiatrist, a clinical or educational psychologist, and a psychiatric social worker—each mental clinic to be associated with general medical and various special clinics and dispensaries, as well as with the organized social agencies and forces of the community.

As Dr. Willets, psychiatrist of our mental clinic in Germantown, has shown you, you as school medical inspectors or health dispensary chiefs are potential directors of mental pre-clinics. You can gradually gather about you psychological examiners and social workers acquainted with the fundamentals of social psychiatry.

In this, you will have, if you wish, the hearty coöperation of the mental hygiene staff of the Public Charities Association, under the directorship of Dr. E. Stanley Abbot. Moreover, there are a considerable number of neuro-psychiatrists throughout Pennsylvania who are now affiliated with the mental hygiene movement, some through their community activities and others through their service in the neuro-psychiatric divisions of the army and navy, and who, I am sure, will gladly coöperate with you.

Still another resource will presently be at your command. Superintendent Finegan, our new head of the Department of Public Instruction expects to organize a Bureau of Mental Diagnosis and Special Education in his department early in the fall. Such a bureau will doubtless mobilize and gradually train a growing corps of psycho-educational examiners and teachers having the viewpoint of social psychiatry, and capable of rendering efficient assistance in mental clinic work.

Pending the development of an adequate system of mental clinics, the mental hygiene staff of the Public Charities Association has been asked to suggest a working plan for the Health Department in connection with its duty to make official recommendations regarding the admission of physically and mentally exceptional children to special classes. That tentative plan is now in your hands. It will probably be tried out in certain selected localities this fall. The methods therein suggested are now being demonstrated in this camp. Before the end of the camp I shall be glad to confer with those doctors and nurses who are positively interested in the plan.

The amendment, above referred to, which is to authorize these examinations and special classes, is now in the Governor's hands. We feel assured that his signature will be affixed in the near future. In making its operation effective, not only will you have the hearty support of your Chief, Colonel Martin, and of Superintendent Finegan, but also of a great number of educators, social workers, and public-spirited men and women throughout the State who have been laboring for its enactment.

The amendment became a law on July 22 of this year.

MEDICAL INSPECTION AND MENTAL CLINICS.

Dr. Isaac Willets, Psychiatrist, Germantown Hospital.

I want to tell you something of the relation between the general practitioner, and the nurse, and this abstruse subject of psychiatry. The general practitioners of medicine and nursing as a rule, look upon all these special subjects as something a little above them and the specialist is regarded as a sort of autocrat. He is not and doesn't mean to be. I am a general practitioner and I think I can express the feelings of the general practitioner about this thing as well as anyone can do it, perhaps better than a specialist.

At the Germantown Hospital where we have been conducting this mental hygiene clinic in connection with the nerve clinic, we have found no trouble in educating our nurses, social workers and others to an understanding of exactly what we want and after one or two months experience they do as well as the older psychologists. We have one experienced person to do the Binet Measure testing, the rest of the work is left to the nurses and myself.

A great deal can be done and is done to help what to the ordinary mind seems an incurable case unworthy of any special care; that is the general attitude of doctors and nurses towards many of these mental cases. We have high grades and low grades, those that are just a little below or above normal. For normal we simply take the average all the way through—with children it is their ability to go through different grades nicely. Any child is called normal if he will go from grade to grade in the years expected of him.

What is to be done with the child who is a little subnormal? The question is, is that child sufficiently subnormal to be placed in a special class or to undergo a special Binet test. There are a good many diseases which make a child appear subnormal when in reality he is not—diseased tonsils, adenoids, impaired eyesight,—I have known children to go through all the grades of school and not see the blackboard once, they were nearsighted and yet went through the grades.

These children in the schools who are just a little subnormal are classed as morons—parents do not send idiots or imbeciles to school. The high grades, those morons, are the kind that get into the schools and then drop back in their classes until by the time they have reached the age of 13 or 14 they are down in the third or fourth grade or even below. Those are the cases the school doctor and school nurse come in contact with. What is to be done with these cases? They are not institution cases if they can be properly cared for at home. We have a number on our records that show decidedly that the children are better in their own homes.

We have a social worker visit the parent and explain the situation to them; then we allow the parent to visit our special classes. As a rule the parents hesitate to send children to these special classes. These children must be carefully studied, but they can be roughly studied by the school doctor and nurse, who will know almost immediately whether or not the child is a proper subject for special study and assignment by the psychiatrist.

Special training classes ought to be in every community where there are schools; they are not, I am sorry to say; they are in the larger towns but not in every community. I am asking you doctors who are connected with State work to see if you can't establish through the State or your county medical society, classes that can be reached by backward children in your districts. These children do not make any progress in the regular grades, they must have special treatment.

If we can establish in every county,—or two or three in a county,—a special center where these children can be gathered from different schools and form a class under a special teacher, you would be surprised how much good will be done in the way of giving these children, not a superior education, but in enabling them to take care of themselves and make their own living at some mechanical work; if left alone in the grade they will never attain this end. Medical treatment is not indicated in any of these cases with the exception of the cretins, who are amendable to thyroid treatment. Nature has given these children brains of limited possibilities; and we can only make these brains do better work by proper training.

All children who show deficiency in their classes are not necessarily backward. We have even had cases brought to us at the hospital that were actually supernormal. One mother brought a child to us asking that we make arrangements to have it admitted to Elwyn, the institution for the feeble minded near Philadelphia, and upon making a test it was found that the child was actually supernormal. The child had a disease known as infantile cerebral palsy and was lame, its mentality was above normal, but because this child was deformed its mother thought it should be admitted to Elwyn. Those are the cases you must look out for. Others have come to us that were unable to do anything in school; they have been put in special classes and are improving right along. Some adult cases are brought to us. In every case we do for them whatever is indicated by the result of the examination.

A great many of the cases which come to us are very backward. They are low grade morons usually, and by a moron I mean a child that is 8, 10, or 12 years of age and shows the mentality of a very small child under 6 or 7. There is not much that can be done for them. Above that and up to the age of 11 or 12 they are called morons, which means they are defective but still have enough mentality to do many little things in the home and for themselves; they are educatable to some extent and are always sent to school though they may not learn much; thus eventually they come under our supervision. What shall be done with them? They are not institutional cases.

If we have special classes under competent teachers and the parents are willing and have sufficient money to employ a special teacher, that is better still, because the attention of the teacher is given entirely to the one case and she can study and develop that one mind along the line in which it is most capable. Only when all other efforts fail should a child be sent to an institution.

We need special classes in the schools and we need them badly, because through them we do not only relieve the grades of the interference which these pupils always produce, but, better than this, we are doing the very best thing possible for the pupils themselves.

(Following Dr. Willett's talk Dr. Phillips read a report of the Harrisburg Mental Clinic).

MENTAL HYGIENE.

By Major E. D. Bond, Professor of Psychiatry, Graduate School,
University of Pennsylvania.

Mental hygiene is a form of social endeavor which is seeking its proper place in the world. That is why it is a valued privilege to discuss its possible activities before administrators of Public Health, a department which has firmly established its place in this State. Public Health rests upon principles which are simple; we can hardly see how any reasonable argument can be raised against them. Mental hygiene, no matter how complicated it may seem, rests upon foundations no less simple and convincing.

First of all, mental hygienists *need help* and need it primarily from Departments of Health. The promotion of physical and mental health must go together. It may not be necessary for the State Department of Health to take over the whole problem of mental diseases, but it is essential that the scientific spirit and methods of those who conserve our physical welfare shall permeate efforts to make our minds better.

Secondly, mental hygiene *can help* departments of health, and as these departments touch charities, corrections and physicians it can help them to help the public. Last year this came out clearly in army work at Newport News. All women arrested most of them for prostitution were examined by a public health officer for venereal disease, and by a Pennsylvania psychologist and myself for mental trouble; 80 per cent. were found venereally infected and 50 per cent. feeble-minded. For the public both findings were important, even considering the spread of venereal disease only; for segregation and control and corresponding diminution in chances for infection could be enforced for a longer time on the feeble-minded than on the others. The psychiatrist is useful because he is trained to observe special disorders, just as the school inspector almost automatically notices a beginning rash or a sanitary expert a bad arrangement of outhouses and well.

While a wise officer of mental health will not find as many diseases as men in other lines, those he does find he can often dispose of permanently, so far as danger to the public goes. The imbecile girl who cannot in ordinary life protect herself or others from recurring venereal disease can, under the conditions we are working for, be protected for life—which also means that the community has nothing more to fear from her. So with the habitual criminal; instead of treatment and release or serving a term and then re-exposure of the public, there is or should be the recognition of a permanent disease.

Now, after this glance at the relations of Mental Hygiene, what is it? It is an effort to help all the citizens of a state to keep peace with themselves and their neighbors, and hardest of all, with their families. Its aim is to make the minds of all "think better, feel better, act better than they do now." With physical hygiene—and this ought to be emphasized in this upset generation—it tries to make people work better and to add to that production of useful things which some day is to bring down the high cost of living. Every scheme for social progress is going to be hampered or stopped if it does not pay attention to the following propositions, which I think you will find need only to be stated to be believed.

1. *Inquiry* into the nature, causes and treatment of mental disease and defects should be fostered. This is the cardinal rule for the Department of Public Health and all that can be asked is that public health examples should be followed as far as possible. The great examples will always be typhoid, malaria and yellow fever; in general paralysis we have approached the mark. We notice, however, that when we make headway it is by getting into touch with general medicine; general paralysis turned out to be something added to syphilis. If chronic syphilitic infection is an essential to one mental disease, why cannot other chronic infections bring about other psychoses? We have to reach out for help to the dentist and the bacteriologist. In mental measurement the psychologist has brought help. This is time when the wise psychiatrist is calling upon all the resources of medicine to help his patients.

2. This knowledge, old and new, of causes and prevention of mental troubles, should be *given to the public*. People should know that syphilis, alcohol and drugs cause mental abnormality. They should be told often of how children live in schools for the feeble-minded, how they are protected from the unfair competition of the world outside, from the jeers of brighter boys, the scoldings of uninformed teachers; how they are taught slowly to do the simple things that they can do well, and kept out of jail which catches so many of those whose parents cannot bear to have them taken away from home. The public should know that a colony for adult insane or epileptics can be run on the same lines and furnish the same advantages provided it is tied up to proper medical supervision. Every citizen of Pennsylvania should know that feeble-minded parents can produce only feeble-minded children, and that his own well children will have to support them. It should be well spread abroad that mental disease tends to crop out in the children of psychotics and this information, rather than well meaning but often mistaken laws, should lead to a reduction in children with bad inheritance.

To physicians, especially the general practitioner, something ought to be said about the mental patients we all have seen and are going to see in any medical work. In the first place we have now the abbreviated Binet and group psychological tests which will sift out material for further observation—the dull, the morons, the imbeciles. It is certain that they are worth trying on backward children in school, or perhaps all children; on prostitutes; on criminal repeaters.

The people we all know who have two moods should be examined for maniac-depressive psychosis when things go wrong with their affairs. I have in mind a very bright girl who at times gets talkative, fresh, has elaborate plans and a rather forceful and convincing way of telling them; in one of these times she had an illegitimate child; lately she has run up large bills at several hotels and she is likely at any time to be haled into court. At other times she will hardly have ambition or energy enough to go out of her house for months at a time. There are hundreds like her in Pennsylvania, but they are misunderstood and mishandled.

Other people rather slowly drift away from their normal, draw into themselves more and more, become silly, or develop ideas of being persecuted. These need early observation for dementia praecox.

When people about middle age become simpering and vulgar and extravagant, it is time for the community to intervene quickly, if pos-

sible, to save property which is needed for the support of the patient and his family—to keep them becoming burdens on the state if for no better reason.

Physicians need to know that delirious cases which are distressing in general medical or surgical wards, do marvelously well under psychiatric nursing. In an army hospital with the best of general care, cases of mild delirium were sent to psychiatric wards to die, but didn't. In fact one man with pericarditis, pleuritis, otitis media, feeble-minded to start with and temporarily insane, made such a good recovery that the army refused to discharge him. If throughout the state access could be had to psychopathic wards, life could be saved.

3. We must ask for registration and *supervision* of the mentally affected, for the same reasons that registration of the tubercular is advised. This, it is found, gets a natural start in the aftercare of recovered patients discharged from state hospitals.

4. *The way should be made easy* for a mental patient to get the proper treatment. An astounding thing is that the past tendency has been to make it almost impossible for him to get the proper care. All interested in social work know that in this state as in others you can get a broken leg taken care of at once, but a broken mind, even one due to recover faster than the broken leg, is taboo.

The following would seem a good way for a patient to come to treatment. A social service clinic, with an employment arm, may decide that an inefficient man's trouble is not economical but medical. The place to which he should be referred should be a general medical clinic, appropriately managed by the local health officer, with a psychiatrist and psychologist as assistants. To this clinic there would come in the first place those who realized that they were sick or whose friends realized it. The very highest type of medical nursing and social service care is needed here, for this is the place where certain patients may be chosen for home care, where others may get an understanding of their own puzzling sensations which will in the long run save them from becoming burdens upon the community, and where relatives may learn the best way to safeguard a patient's person and property and avoid danger to the public. This clinic can inform teachers and judges as to the mental condition of delinquents and criminals. When a patient clearly needs institutional care this clinic can expedite matters; it can educate its clientele as to what a hospital for mental diseases stands for; as to the advantages that may come from early and intensive treatment of infections; of the relief that may come from removal from the trying incidents of home.

Unfortunately the next step beyond the general or mental outpatient clinic is not well provided for in this state and in many others. To get proper treatment for perhaps a sixth of the cases that come to a mental clinic, and these the most difficult, the temporary psychopathic hospital is needed, just as acute wards must receive a number of special cases from medical and surgical outpatient departments. And such psychopathic wards or hospitals are not available. Such a hospital can be a detached part of a state hospital or form a part of a general hospital: both situations should be encouraged. Michigan, Massachusetts, Maryland and Iowa have planned such institutions. Without them the plunge from home to state hospital is made too severe for many patients; first treatment comes too late;

and the patient and his friends become surly in overcoming legal obstacles instead of resigning themselves to a gradual and more understandable increase in the need for protection and treatment.

A series of cases of encephalitis has recently impressed this upon us. The first patient would never have come if she had not known she could come as a voluntary patient. All of these cases had mild fevers and signs which would have been missed entirely if they had waited long for treatment. We cannot allow ourselves to feel that any person may lapse into chronic insanity for want of care—the fate is too awful.

State hospitals need little attention here; many patients will find there and nowhere else the most appropriate treatment. The way into these hospitals, thru no fault of their own, is not as open as it should be. The state institution will always furnish the bulk of the psychiatrists for any large state clinics and will be central points for systematic aftercare of discharged patients. In keeping chronic patients it is providing happier conditions for them than can be found where they are not understood.

State homes for the feeble-minded and the epileptic will receive their appropriate patients. It cannot be emphasized too often that they provide the only places where tolerance is possible because of mutual understanding and a simplified life; unfair competition being gone; fits not thought to be funny or shameful; association being with people of their own size.

At General Hospital No. 6 during the war the ideals set out in this paper for the clinic and the psychopathic hospital were realized without trouble. The inefficient soldier or the sick soldier, was sent to the receiving ward of the hospital, a clinic. Often no thought had been given to kind of sickness—measles or dementia praecox—he needed medical attention for flatfoot or brain disease. The receiving ward could call on any specialist for help in classification. Many soldiers with minor ailments could be sent back to their companies at once. Prisoners from the guardhouse appeared for diagnosis. The broken arm was sent to the surgical ward and the hysteria or mental case to the psychopathic group—one as easily and with as little red tape as the other. If he got to the wrong place, or developed something new, he could easily be transferred—there was not more stigma attached to one place than another. Treatment facilities were adequate and nursing personnel full—a remarkable situation. One hundred and twenty mental patients with a quick turnover were handled at once with no disturbance to the general hospital—only convenience. When these patients were sent home, as happened when the illness was apparent on entering camp, it is a sad commentary that in many states the chief of police or Secretary of State was the only one interested in what should be a medical problem.

In conclusion; I have made four points, which have been established by common consent as ideals. Summed up they amount to this: The work of Mental Hygiene is to investigate and remove the causes of mental diseases, and making necessary treatment easy to get. It is hard to object to such a program, which would lift economic burdens from the community.

The matter seems to me essentially medical, to be theoretically a part of State Public Health, and practically of use only when it is inspired by the ideals which have given Public Health its high and assured place in the world.

**HOME ECONOMICS, SOCIAL SERVICE, OCCUPATIONAL
THERAPY, EMERGENCY AID COOPERATION.**

HOME ECONOMICS—Miss Pearl McDonald, State College, Pennsylvania.

NUTRITIVE AND ENERGY FOODS—Miss Jeanette Leatherman, Home Economic Extension Service, State College, Pennsylvania.

DIETETIC VALUES—Miss Jeanette Leatherman, Home Economic Extension Service, State College, Pennsylvania.

HOUSEHOLD DIETETICS—Miss Jeanette Leatherman, Home Economic Extension Service, State College, Pennsylvania.

FOOD AND FOOD PREPARATION—Miss Jeanette Leatherman, Home Economic Extension Service, State College, Pennsylvania.

SOCIAL SERVICE—Miss Martha Magee, State Organization Home Service Section American Red Cross.

OCCUPATION THERAPY (Abstract)—Mrs. Francis F. Hinton, Philadelphia.

**THE ACTIVITIES OF THE EMERGENCY AID ASSOCIATION
IN COOPERATION WITH THE DEPARTMENT OF
HEALTH**—Mrs. J. Willis Martin, Pres. Emergency Aid Association of Penna., Philadelphia.



"HOME ECONOMICS."

Miss Pearl MacDonald, State College Home Economics Extension Service.

It is certainly a very great pleasure to have the privilege to talk to you about the State College Extension Service in Pennsylvania, and tell you what our work is, and what we intend to do in making Pennsylvania the outstanding State in the Union as far as citizenship in the country is concerned. First, I want to talk of the organization of the Home Economics Extension Service and its general plan of work; what home economics stands for, and what it includes; some of the lines of work, and some of the ways in which this work is carried out.

Many people think of the Extension Service as something very recent. During the war many people thought it was established to carry on certain lines of work. As a matter of fact, the Agricultural and Home Economics Extension Service had its beginning many years ago. As far back as the Civil War the Federal Government wished to educate the people along technical lines other than professional ones, and there was a law passed in each State for what is known as Land Grant Colleges. They have been called Colleges of Agriculture and Mechanical Arts, including engineering and other technical lines of work for young men. After the work in agriculture was started, the men who taught in these colleges realized that for the basis of the subject matter which was to be given to the young men in College they must have the fundamental principles of agriculture to give them. These could only be determined through experimental work, and the Government realized that there must be experimental stations. Therefore, in the seventies there was passed a law for the establishment of experimental stations. We always like to speak of certain very striking things in our own State because we are all proud of Pennsylvania. All of you will be interested to know that at the college, in connection with the United States Department of Agriculture, there is an animal nutrition experiment station;—there is only one other in the world.

The next step in development is the Extension Service. The school is designed for young men who can give from two to four years for their technical training in agriculture, engineering, etc. But here are all the farmers of the State who want to have the value of this experimental work, and to apply the knowledge gained from it in their agricultural work in the State. These farmers cannot go to the college to spend two to four years to secure that knowledge, therefore, the natural result was to have men trained both in the practical and technical side of the work and sent out over the State to carry this information to the farmers all over the State, to be used by the farmers in bringing their agriculture to a high standard of perfection. The source of food production is absolutely essential in any civilization.

As a part of this work, the Federal Government passed a law in May, 1914, providing Federal funds to be used for Extension Service

in agriculture and home economics, because the home problems are quite as important as the agricultural problems. Home economics applies to all homes in the State. I want to speak of the side of the service in which women are especially concerned, and in which we can be of service to all physicians and nurses in the State. The Extension Service employs women to go out through the State and carry to the women of the State the knowledge, based upon scientific principles, relating to the various problems in the home. They are women who have had technical training in home economics, and have also a background of experience in meeting problems in the homes in the State. The women's work is centralized at the college. Where our young women are acquainted and have started certain work, we like to send them back there, where they know the conditions; but if at any time you want help we can arrange, if you will write to the college, to send some of these young women to help you in your work. Of course, as the work grows, the number of workers will be increased to meet the needs.

As to the field of home economics and what it includes—it began, at first, with the teaching of cooking and sewing in the public schools. It was known at first as domestic science or domestic art. It had to do generally with the mechanical side of women's work—the actual doing of things. The broad, accepted term now throughout the country is home economics. Many people still think that it only has to do with the preparing of foods and making of garments, but it is much broader than that. It includes, in its large sense, all the things that have to do with the home. There is the problem of shelter which is fundamental—its proper building, its sanitary conditions, the arrangement for the convenience of the worker and the comfort of the family, and the managing, organizing, and systematizing of its work to save time, human energies, and material. The shelter, the home or house problem has also to do with the financial administration of the home. We all realize that the economic principle is fundamental in business, and is equally so in the home. We can never solve the home problem until we solve the economic problem. A new feature that is coming along is the household account—the knowing where our money goes; the knowing the needs of the family as far as food, clothing, operating expenses, education, rest, recreation, social relationships, and the investments that we make to provide for the years that are to come.

May I say that this is a problem which has developed in the course of our work? The nutrition problem was worked out first. The Extension Service has a Household Account Book worked out on the basis of the family needs. We publish a great many bulletins which are free to any person in the State. For the Household Account Book, however, the college has to charge the actual cost of printing which is fifty-five cents. A year ago, the Agricultural Division got out a Farm Account Book which sells for a little less. We hope it is going to work. If you have any criticisms or suggestions, we will be glad to have them because it is very difficult to work out an absolutely perfect thing.

Secondly, home economics includes the clothing problem. This may not seem as important as the shelter problem. However, those of you who have had experience with the foreign speaking people of our country know how the women dress their babies. We have no way

to know to what extent a child's physical health throughout all its years of living may be affected by that particular thing in early childhood. Then it includes the proper dressing of the older children so that they may have perfect freedom of growth and development as healthy children should. The high cost of living has brought the problem of the care and the re-making of garments.

The third thing is the nutrition problem. One of the fundamental pieces of work and one that will have to continue through many years is the question of the problem of the proper food for the individual from his birth, on through his growing years, to the years of maturity. The men on the farm have been very much more ready to accept the results of animal nutrition investigation than people in general are to accept the investigations in human nutrition. If the farmer is willing to better his stock by following these principles of animal nutrition, does it not seem that we can benefit ourselves by the results of human nutrition experiments? Some of the great men in our large universities have done wonderful work in the line of human nutrition. The problem of nutrition begins in babyhood and lasts through the years. We have, of course, been greatly concerned with baby welfare work. Now we have the problem of the child from one and a half years through the growing period.

We must teach the parents to get the relation of height and weight to age. During our work we have found that a very large percentage of the children are under weight. There is either something physically wrong or they are not getting the foods which build up the body, supply the proper amount of minerals, and regulate the body processes. Last year, as you know, the Children's Bureau had a "Children's Year" in Pennsylvania. Because of our large foreign population in Pennsylvania, every year should be a children's year for the foundations of a strong and vigorous life are based on the feeding and care of children during their early life.

Then there is another thing which we think of as the fourth thing in home economics and this is, after all, the heart of the whole matter—it is the life of the home—the recreation, because none of us can work well unless we play well; the education which is the life of the family—not the school help but the education that we give ourselves through all the years that we live; our social relationships. We can never go back to the narrow family life we used to live. Every family and every individual must consider the relationship to other families in the community and must remember that no community is better than its individual family. The economic side which puts away for a rainy day does away with all of the other things. The clothing, the shelter, the nutrition are the physical things that contribute to the life of the home, the spiritual side of it. If the physical things are not right we can not make the spiritual things right. All of these things rest upon an economic basis.

Our ideal in home economics is to have that full development of the individual that means all-around living, and we cannot work unless we have an ideal. The art of home making is fundamental. The art of home making is like any other fine art. It can be brought to its highest perfection but that means an educational process. It means giving the vision to all people, and the means by which they can attain some degree of perfection.

The art of home making is a real service and contribution to our national life, and the result of the fine art of home making is a better and larger citizenship—men and women with the vision to know and to do.

As to the workings of the Extension Division—as you all realize, we have to work in groups. We can first reach people through the group, and then later we can develop into the individual work. Naturally, the first point of contact is through the nutrition problem. It involves the knowing of foods, what are their special functions, which meet the body needs, and the combination of them to meet needs, and the training in food habits which should begin with children and go on up through the growing years. We have arranged, during the past few years, to meet with groups of women to discuss with them the body needs as far as foods are concerned.

Then we have the individual work in the homes. With the foreign element the individual work is most important. Much of our work for the next few years must be with the children, and with the weighing and measuring of them, and teaching them health habits. When you talk to children about foods and tell them that they should have milk every day, and eggs, and fruits, and well cooked vegetables, the children tell their mothers and thus the mothers learn what is best for their children.

We can best help you by teaching mothers and children about nutrition. Our young women can give lectures and demonstrations along these lines to the women of your town.

Another problem is that of the one hot dish in the rural schools. It is something we have been working on and want to do more of. You men who are County Medical Inspectors can work with us through superintendents and teachers. We want one hot dish, and that may be just hot milk, hot cocoa, or hot soup to combine with the food the children bring from home. Cold food every day is not good for little folks during the growing years.

Then there are the women's clubs. In many sections we have had meetings with these organizations through which this work can be brought to the people.

Then there is the Americanization work. Out of the nine million people in Pennsylvania about one and a half million are foreigners. Many of these foreigners settle in Pennsylvania because of the coal industries. We, in Pennsylvania, have a special duty because of this. We will never reach these people until we teach them English so that they can understand what we are telling them, until we teach them how to select, use and prepare their foods, and how to select materials for making garments such as the American children wear. Those are the outstanding needs. We can help you in the nutrition, housing, and clothing problems of these people, but the nutrition is the most outstanding feature. We have found splendid assistance in this work through the priests acting as interpreters, and from the district nurses. You people should know them personally; by working with them we can accomplish much along these lines.

I want to mention that we had many requests this last year in regard to the remodeling of houses, and also in regard to the apparatus for kitchen convenience which will make the home work easier. Of course, the furnishing of the house is a new problem. Nutrition, clothing, housing problems, and the accounting which is fundamental in solving any economic problem in the home, take the precedence.

DISCUSSION.

Q.—The nurses want to know if the Extension workers will cover every county in the State?

A.—During the emergency, we were able to do work in every county. We are limited in the number of workers, but as the demands increase and funds are available our force will be increased. If we can know ahead of time we can take care of the various requests in all of the counties. We always have a certain number of women to cover the work at the college. We will, however, do our utmost to help you. Oftentimes we have had special campaigns and have done intensive work to cover a large territory in a comparatively short time.

Dr. MILLER—Did you tell them of the coöperation which is already going on between your department and the State Department of Health?

A.—We have had the pleasure of working with the State Department of Health. We have had what we called Child Welfare Weeks throughout the State. Dr. Miller's Division had the exhibit and his assistants explained the housing problems, the sanitary conditions, and the fundamental things in health along those lines; and our young women assisted in the discussion of the food and clothing side of the problem, and thus covered the whole health problem. We arranged through the schools to have the children weighed and measured, and where we found a large number of children who were under weight our young women could say to them "If you want to gain, you should drink a quart of milk a day." Many times the parents would come into the exhibit and talk over with us the problem of nutrition in their children. Later on, we hope to go back and weigh those children and see how much they have gained. That we have considered one of the most effective and one of the best pieces of work we have done. Then, of course, we have had a great many individual children's days where we have taught nutrition. These were arranged for by local organizations. We believe that one of the things that might be done in the rural districts, where the percentage of infant mortality is higher than in cities, is, perhaps, to have a day or a half day when we can talk food values, weigh and measure the children, and invite the parents. Then go back again in three or four months and see if there is any improvement in those children.

Q.—The nurses would like to know about the family budget.

A.—We have tried to work that out with the thought that many women have no system of household accounting. In our system of household economics we have called it a "plan of spending." If you work out a good plan of spending it must result in a saving of funds. You must know how much you have to spend—your total receipts for each month from every source. Secondly, you want to know the source of those receipts—where the money comes from. You want to keep a record of when you receive it, and when you spend it. Then you want to know how you spend it—the items for which you spend it. We have the value column. It would be cost for the city woman, but the woman who uses her own garden produce which has a money value should estimate that value at what she would receive for that produce if sold from the farm. All articles which you purchase must be divided and classified. There are columns for food, clothing, operating expenses, and the life of the home. In order to

bring out and establish your principles of foods you must know the things that are being advocated now such as the larger use of milk and the products of the dairy, the free use of butter particularly for growing children, and that the freer use of fruits and vegetables in the diet is absolutely essential; then the generous use of cereals and particularly of cooked cereals, and the more moderate use of meat. For that reason we have subdivided the food column into meat and fish; eggs, milk, and products of the dairy; fats other than butter; fruits and vegetables; and grain products. At the end of the month, a woman can see if she has spent too much for meat, and can then strike a better proportion of spending. Our women can help the mothers to select the foods that will do the same work for the body and yet be less expensive. The clothing column includes the cost of the clothing, its maintenance, and repair. Your operating expenses include heat, light, ice, and anything that contributes to the operation of the household. The property expense is a term we have coined. It should include rent, taxes, fire insurance, water tax, repairs, etc. Then we have the life of the home—that includes the furnishings of the household; the things that give satisfaction and comfort, or the things that pertain to the home that bring you to a better level; recreation; what you do for your community; what you spend for books, magazines, art, and travel; what you spend for gifts or any other expenses in your social relationships; what you contribute to your church; what you contribute to any of the causes that make for better things in your community; and then the investments—bonds, houses or wherever you put your money. This is, in general, the outline of our Accounting Book. We believe that while there are certain proper ranges of expenditure there is a certain proportion that is reasonable to spend.

NUTRITIVE AND ENERGY FOODS.

By Miss Jeanette Leatherman.

You will remember that I stated that food serves the body in four ways—first by furnishing additional building material—second by furnishing heat and energy; third, regulation; and fourth, growth and well being. We need a well balanced diet to maintain the body and if you took out any single group you would not have a well balanced diet. The protein group is classed as the one that furnished nitrogen, and you cannot live without nitrogen.

We are going to continue the energy foods to-day. The chief requisite of good nutrition is adequate fuel. The fuel foods are the cheapest foods; 90 per cent. are from cereals, but there is a tendency of many people to live too largely on cereals. We can get energy from other foods of that group and it will be better to have the other groups represented.

Peas, beans and lentils—The figures on the chart show the edible percentage, and are used chiefly for comparing vegetables one with another.

If fresh peas and beans are dressed with milk they are a good substitute for meat—if you make a cream soup, using milk and the green vegetables.

Our most important vegetable is the potato; it is valuable as it gives bulk to the diet and it gives energy. Wherever possible I want to recommend baked potatoes as the mineral matter is closest to the skin. Discourage the paring of potatoes before time to cook them. and recommend baked potatoes in preference to any other way. You want to get the best food value from all your vegetables.

We are going to bake potatoes this afternoon. Always be sure to recommend a hot oven; you get the best results with a high temperature. If you will rub the outside skin with a little fat, any kind of fat, it will soften it and people will be able to eat the skin as well as the potato. As soon as you take the potatoes from the oven, break them and cover with a dish, cloth or napkin. The same is true of boiled potatoes; drain them of their water as soon as tender; otherwise they become soggy and the flavor is spoiled. Drain them as soon as done, but do not cover them with a metal lid; cover them with a cloth so as to absorb the moisture that is condensed.

When you cook vegetables, especially fresh vegetables, try to use the water in which they were cooked in the meal. Use part of the water in the sauce; you can make it half water in which the vegetable was cooked and half milk. If you are not serving the vegetables with a cream sauce you can keep the water for another meal. If you are serving the vegetables with butter, do not dress the vegetables with butter until removing from the fire, as butter is much more easily digested without being cooked. Spinach is the most valuable vegetable for iron, and spinach as it is ordinarily cooked loses a lot of this iron. It is very valuable and it is easily prepared. Boil spinach in small amount of water for twenty to thirty minutes. I have often

found that people add a little soda when boiling leaf green vegetables, I suppose they do it to retain the color. Discourage the use of soda. Also discourage the use of soda in rhubarb. The best way to serve spinach to children is in the form of soup. If they do not care for soup, you can serve it with a thick white sauce and garnish with an egg.

An adolescent girl should have a dish of spinach every day. The reason an adolescent girl requires more is because, of course, she needs more food and the appetite at that age is likely to be fickle; she is likely to crave all sweet things and does not get the foods that contain iron. If she satisfies her appetite with sweet things her diet will be lacking in iron at the time when she needs it the most in her entire life.

PERCENTAGE IN EDIBLE PORTIONS OF CHIEF TISSUE
BUILDING VEGETABLES.

Peas,	} Dried,	24	per cent.
Beans,		22.5	"
Cowpeas,		21.4	"
Lima Beans,		18.1	"

CHIEF HEAT-ENERGY GIVING VEGETABLES, CEREALS
AND FRUITS.

<i>Vegetables</i>	
Sweet potatoes,	27.4
Lima beans, green,	22.
Corn, green,	19.7
Potatoes, white,	18.4
Peas, green,	16.9
Parsnips,	13.5
Beets,	9.7
Carrots,	9.3

<i>Grains</i>	
Rice,	79.
Hominy,	79.
Buckwheat flour,	77.9
Pearl barley,	77.8
Spaghetti,	76.3
Corn meal, granular,	75.4
Wheat flour, high grade,	74.9
Macaroni,	74.1
Rye meal,	71.5
Oatmeal,	67.5

<i>Fruits</i>	
Dates, dried,	78.4
Raisins, dried,	76.1
Figs, dried,	74.2
Prunes, dried,	73.3
Bananas, fresh,	22.
Plums, fresh,	20.1
Grapes, fresh,	19.2
Huckleberries, fresh,	16.6

CHIEF CELLULOSE GIVING FOODS.

Corn—green,	61	Parsnips,	20
Beans—lima—fresh,	55	Potatoes,	20
Beans—butter,	50	Sweet potatoes,	20
Squash,	50	Cucumbers,	15
Peas—green,	45	Lettuce,	15
Beets—fresh,	20	Cabbage—fresh,	15
Carrots,	20	Onions,	10
Celery,	20		

FRUITS AND VEGETABLES—IMPORTANT FOR THEIR MINERALS.*

Watch these three minerals in your diet:—

1—Iron—helps to build red corpuscles and is part of all active tissue.

Spinach,	†.0133	Beans—dried,	†.002
Lettuce, .....	.005	Beans—lima, .....	.0019
Asparagus, .....	.0043	Squash, .....	.0017
Beans—string, .....	.0038	Tomatoes, .....	.0017
Cabbage, .....	.0035	Carrots, .....	.0016
Celery, .....	.0027	Turnips, .....	.0013
Radishes, .....	.002	Onions, .....	.0011

2—Calcium—or lime, helps to build bone and is part of liquid and all active tissue.†

Cauliflower,	†.55	Parsnips,	†.14
Celery, .....	.54	Onions, .....	.12
Turnips, .....	.222	Cucumbers, .....	.12
Spinach, .....	.37	Tomatoes, .....	.087
Lettuce, .....	.26	Beans—dried, .....	.063
Cabbage, .....	.214	Beets, .....	.06
Beans—string, .....	.177	Peas—fresh, .....	.032
Asparagus, .....	.17	Squash, .....	.04
Radishes, .....	.17	Beans—lima, .....	.028
Carrots, .....	.168	Potatoes, .....	.019

3—Phosphorus—helps to build all active tissue and is a part of liquids.†

Spinach, .....	.54	Cowpeas,	†.29
Celery, .....	.54	Parsnips, .....	.29
Lettuce, .....	.47	Beans—string, .....	.284
Cucumbers, .....	.45	Cabbage, .....	.28
Cauliflower, .....	.45	Tomatoes, .....	.257
Asparagus, .....	.39	Peas—dried, .....	.25
Beans—dried, .....	.326	Peas—fresh, .....	.24
Rhubarb, .....	.30	Onions, .....	.24
Radishes, .....	.30	Carrots, .....	.22
Turnips, .....	.292	Potatoes, .....	.166

*All minerals aid in regulation of body process.

†Arranged according to per cent. of minerals—in grains 100 calories of edible food material.

DIETETIC VALUES.

Miss Jeanette Leatherman, Home Economics Extension Service of State College.

Perhaps you are wondering just what the public health nurse has to do with economics and just what is the meaning of home economics; and that is a very natural question in the minds of a great many people. Home Economics has to do with everything of interest to women in the home; it has to do with women's work; you have to do with one phase of women's work, but you know that women in the home have to feed the family, clothe the family, take care of the house, besides looking after the higher life, and if there is any illness in the home women usually take care of the sick.

As social workers you aim to make the life of the people more healthful, more comfortable; to do that very often involves more than just your technical knowledge—you often have to give advice that is not purely professional because you come into such intimate contact with the family and as nurses you know how important diet is to health. That is where the Home Economics Extension Service comes in and that is where the connection between your Department and ours comes in, and that is why I want to take a little time to explain to you the Home Economics Extension Service of State College.

This service was established by a Federal law, the Smith-Lever Law, which provides a fund to be distributed annually to agricultural colleges of each state, provided this fund is matched by an equal amount from the state, for the purpose of conducting Extension work in agriculture and home economics. The Service at State College aims to coöperate with various organizations which are interested in home problems and is free to all the people of the state. If you are not acquainted with the Home Economics worker in your territory you can find out who she is and where she can be reached by writing to the college, and I am sure she will be glad to give you anything the college has to offer. If it is desirable she will arrange to meet with groups of women to discuss child feeding or any of the problems of the home in which she can assist. I want to extend the services of the Home Economics Extension Service of State College to the public health nurses of Pennsylvania.

The reason we want to work with the public health nurses is because, in a way, public health nurses are teachers of home economics. If you have a case in a family with a limited income you can help the mother to use wisely the money she has for the purchase of food; if you can, guide her so that she will buy with that limited amount of money the foods that contain the most nourishment and thus enable her to keep her family healthy and strong.

You should recommend that the family income be divided into separate and distinct parts, and of the food allowance one-third should be spent for milk and milk products, one-third for fruits and vegetables, and one-third for meat. The average family of limited

means spends over one-half of their food allowance for meat and the members are not getting the food value they need and that they should receive for the money expended.

It will not be possible for you to teach food values fully in the homes but you can give them something.

We can take up just one phase of home economics, the food problem. We will discuss food values, food requirements of the body, and the proper preparation of the most important foods, with the principles involved. We will not be able to cook every kind of food we might wish to but we will try to cover the principles of cookery. You have all had dietetics in your training, but I have found in my years of teaching experience that reviews help a lot, they help in fixing things in the mind, and this afternoon I would like to discuss the food requirements of the body.

Of all the necessities of life that the home provides, that is food, clothing, and shelter, food is the most important, and of all the things that are conducive to health, that is food, fresh air, exercise, and sleep, food is the most important. A woman spends one-half of her time, approximately, preparing it and a great many families spend nearly all their income for it, and isn't it a pity that it sometimes purchases sickness rather than health? As you know, malnutrition was one of the chief causes of one-third of our men being rejected for army service, but malnutrition does not always come from under-feeding.

In the rural districts where you find an abundance of food you will find a great deal of malnutrition, and in the families of the rich you will find malnutrition; it sometimes means over-feeding or wrong feeding and the children of the wealthy suffer just as often as the children of the poor; the food supply is not what the body needs. We must know what the body requires before we can plan a meal. Physiological chemists have gone into the matter very thoroughly for us and have found fifteen or sixteen different elements in the body; they have found nitrogen in all the living cells, iron in the blood, calcium and phosphate in the bones and they have analyzed food materials and found all these things, so that all we have to do is to select the things that are needed to repair the tissues and keep the body in working order.

Somebody has likened the body to a machine, but it is really more like a clock because it works all the time and the body requires food to keep it running just as much as to do active work. Food is required to build tissue, to repair tissue, to supply heat and energy, and to regulate the body processes. You will need different elements in the food for these different purposes, and the following chart dividing foods into four classes—(1) those that build, (2) that give energy, (3) that regulate the body, and (4) those that provide for the growth and well being of the body—will be helpful to you in advising the mother as to what she should feed her family and just what elements various foods contain:

1. BUILDING.

(a) *Proteins.*

Meat.

Fish.

Milk.

Eggs.

Cheese.

Peas.

Beans.

Cereals.

(to some extent).

(b) *Minerals.*

Lime.

Phosphorus.

Iron.

2. ENERGY.

(a) *Carbohydrates.*1. *Starches.*

Bread, pastry, etc.

Breakfast foods.

Macaroni.

Tapioca and Sago.

Potatoes.

Bananas.

2. *Sugars.*

Syrups.

Honey.

Candy.

(b) *Fats.*

Cream.

Butter.

Fats in meats.

Chocolate.

Nuts.

Vegetable oils.

3. REGULATION.

(a) *Water.*(b) *Mineral.*(c) *Organic acids.*(d) *Fiber.*4. GROWTH AND WELL
BEING.(a) *Milk.*(b) *Egg Yolk.*(c) *Leaf Green vegetables.*

How much fuel does this machine of ours require daily to build the tissue, repair the tissue, and keep it in running order? This has been worked out by scientists in definite units; they can tell us how many heat units are required by a man lying at rest in bed, to keep up the body processes; and how many heat units are required by a man at active work; it requires only one-half as many heat units to keep the body in working order while at rest as it would if a man were doing active work, or approximately sixteen to eighteen hundred calories.

You will probably ask the question—Just what is a calorie? A calorie is a unit of heat measure; it is the way we designate the measure of energy given off by food when it is burned in the body; food combines with oxygen in the blood and burns, that is it gives off heat and when anything burns in nature it unites with oxygen and gives off heat. The calorie then is the unit of heat measure.

Your next question may be, how much energy does a calorie contain? A calorie contains the amount of heat that would be required to raise a pint of water four degrees Fahrenheit. Two tablespoonfuls of sugar have been found to contain one hundred calories, and one tablespoonful of fat also contains one hundred calories. This has been found out and proved by the use of the bomb Calorimeter.

The number of calories required by a person is influenced by various things. Age will help to modify the food requirements; weather also will modify the food requirement; sex modifies it. A woman does not require as many calories as a man. Occupation will modify

it and climate will modify it. A child that is very active will require a larger number of calories than will a person who has attained his full growth and who is not as active. Children of adolescent age require more than just before or after the adolescent years. People over fifty years of age do not require as much as people under that age; a large person will require more than a small person and if a person is working hard and leading a very active life he will require more calories than the man leading a sedentary life. A man leading a sedentary life will require approximately 2,200 calories per day, while the man leading an active life will require approximately 3,000 per day.

You may ask or you may be asked "how many of these calories should come from carbohydrates and how many from proteins?" The daily diet should consist usually of from 60 to 70 per cent. carbohydrates, and from 10 to 15 per cent. proteins. The protein requirement does not vary but remains the same throughout life. The cheapest and best source of energy are carbohydrates, but proteins can be burned by the body if necessary; you must have protein; every living cell is found to contain nitrogen and you can only get nitrogen from proteins.

Two well balanced meals a day will ordinarily take care of the protein requirements of the body if you have one kind of protein in each meal and that protein in the form of meat once a day. In the diet of children under six years protein should be given in the form of milk and eggs instead of meat, as meat is not so easily taken care of by the child's digestive apparatus. It putrefies more rapidly and has a very strong flavor. Milk contains calcium and phosphate more than any other thing. A child also needs iron. Mrs. Rose, in "Feeding the Family" says "Nature doesn't allow a child to come into the world without a good supply of iron, sufficient to last the first year of its life." Milk does not contain much iron, so after the first year the child gets iron from eggs and vegetables, therefore we would say that the chief sources of supply of lime, phosphorus, and iron are milk and vegetables.

Again you may be asked, "What is a balanced meal?" A balanced meal is one that has in it a representative from each of the four classes of foods. It is one that supplies the body with all its requirements and contains some form of protein, some form of starch, some form of sugar, some form of fat, some regulating material, and one of the growth and well being foods.

Q.—What are the leaf green vegetables?

A.—Lettuce, cabbage, beet tops, spinach, asparagus, etc.

HOUSEHOLD DIETETICS.

By Miss Jeanette Leatherman.

The four functions of food are, as I told you yesterday, (1) to furnish the body with building material and to repair and build tissue; (2) to furnish heat and energy; (3) to regulate the body processes; and (4) to furnish protective elements and growth accessories.

Under those four classifications you can group all our food materials. Proteins are perhaps the most important group because we cannot have any living cell without nitrogen and we can get nitrogen only in protein foods; so we must have proteins in the diet. I think perhaps some of you get the impression that we must have meat in the diet; we do have to have protein but not necessarily meat. Milk and eggs can take the place of meat, in fact Dr. Lusk says that any adult could get along without any meat if he had one quart of milk, two or three eggs, and a bit of fish.

To-day we will discuss carbohydrates. From 60 to 70 per cent. of the day's diet of a normal person should be carbohydrates. Cereal grains in the form of breakfast foods and bread, is the chief source and the cheapest source of our carbohydrate supply; others are macaroni, tapioca, sago, potatoes, bananas, etc.

When you are recommending the free use of cereals in a family, advocate buying in bulk. I know that in general we would not recommend the buying of food in bulk, but in the case of cereals it is different as they are cooked before they are eaten and it is very much cheaper to buy them in bulk than in small quantities. You will have considerable difficulty in getting people to boil cereals thoroughly. Do not recommend the use of prepared cereals where the income is limited, they do give variety and children will often eat them in preference to other things, but they are far more expensive. Cereals made from whole grains are preferable as the outside coats of the grains are not in the prepared cereals, i. e. the cream of wheat variety, etc., and these outside coats contain a large amount of mineral matter and so are much more valuable for the child than are the finer cereals. The great advantage of cereals, beyond the amount of calcium they contain, is that milk is always served with them and there can be no substitute for milk in the diet of a child. A child of six needs a quart of milk a day.

Even a well cooked cereal should not be given to a very small child of say a year or a year and a half. They should have cereal but it must be given in the form of a gruel, or later on in the form of a jelly, by which we mean cereal in the form of a barley flour, very thoroughly cooked with a large amount of water so that it will go through a tube. If you cannot get flour or fine meal you can strain well cooked cereal or you can use dextrinized crackers, but be very sure that gruels and jellies are thoroughly cooked and strained before they are given to the child; they should be cooked three or four hours and then rubbed through a fine sieve. A young child should be given some form of cereal daily.

The following table will be helpful in the cooking of cereals, which, if they are to be used for breakfast, should be cooked the night before. Boiling water should always be used, a little salt, and the proper proportion of cereal. This will differ according to the kind of cereal used.

<i>Kind.</i>	<i>Quantity.</i>	<i>Boiling Water.</i>	<i>Time.</i>
Rolled oats,	1 cup	2 cups, (1 teaspoon salt).	2 hrs.—
Oatmeal,	1 cup	4 cups, (1 teaspoon salt).	3 hrs.—
Cornmeal,	1 cup	4 cups,	3 hrs.—
Hominy,	1 cup	4 cups,	2 hrs.—
Wheat (flakes),	1 cup	2 cups,	30 min.—
Wheat (granulated), . . .	1 cup	4 cups,	1 hr.—
Rice (steamed),	1 cup	2 cups,	45 to 60 mins.
Rice (boiled),	1 cup	2 quarts,	20 to 30 mins.

Note: Cook for five minutes over fire, then place in hot water or in fireless cooker for remainder of time.

Rice, steamed, takes longer to prepare and the grains are not so separate as when it is boiled, but there is no loss of mineral content and for this reason steamed rice is preferable to boiled rice, although boiled rice can be made more quickly. Rice should be thoroughly washed before using by placing it in a strainer and then in a pail of water and stirring well, changing the water until it is perfectly clear; in this way the talcum or other material used on the rice is washed off. Brown rice is preferable to polished rice because the outside coats contain much mineral matter which is valuable.

I think the greatest trouble with cereals and the reason children do not like them is that they are not properly cooked and not properly seasoned and served.

Fruits are very valuable in the diet; they contain carbohydrates but are from 75 to 70 per cent. water. Fruits are generally appetizing and the mineral matter and acids they contain are valuable; they help to regulate the body and they are base forming. A diet of meat and cereals is acid forming and the use of vegetables and fruits helps to overcome that and give an alkaline reaction that is necessary.

Fruit juices, especially orange juice, can be introduced very early into the diet of a young child. Dr. McCollum always recommends the feeding of orange juice between milk feedings for young children, not only for its regulating effect but because it also tends to keep down bacterial count. Unfortunately, however, oranges are one of our most expensive fruits and very often people cannot afford to buy them; when this is the case the use of less expensive fruit juices or the juices of dried fruits should be urged. Dried fruits are preferable to canned fruits and are less expensive.

In preparing dried fruits, first wash them thoroughly; then put them to soak in water, either hot or warm, and allow them to remain there from a half-day to a day or over night; then cook in the water in which they have been soaked. Dried fruits are best when cooked in a fireless cooker or when cooked very slowly. Prunes, apricots, and peaches are the dried fruits most generally used.

In addition to being appetizing and containing certain valuable elements, fruits, with the exception of blackberries, are splendid laxatives. Apples are the most common and perhaps the most valuable of our fruits and can be given to small children provided they are scraped and have the skin removed, or if they are cooked. Very often a little apple sauce can be served in the same dish with cereal, thus making it more attractive, especially for children. Stewed apricots and peaches can be used in the same manner, and dates cut in pieces and stirred into hot mush will often prove attractive.

Bananas are the highest in real food value and are the most sanitary of all our fruits, as Nature has provided a complete covering which must be removed before the fruit can be eaten. The banana is the one fruit that contains starch. That starch however, is uncooked and is not acceptable to children unless the fruit is baked. Bananas are not as ideal for breakfast as oranges or some of the more acid fruits.

Rice can be used in combination with many fruits to make simple desserts, and a combination of steamed rice, cooked in a small mold, and stewed peaches served in the same dish makes a very appetizing dessert. Fruits are very easily digested and fruit and cereal served together for breakfast makes an excellent combination.

If you happen around to the home of one of your patients on jelly-making day, recommend that fruit for jelly-making be purchased a little under ripe rather than a little over ripe, and that a little less than an equal quantity of sugar be used with the juice.

If you want to get a good book for a reference in home dietetics I would recommend Mrs. Rose's "Feeding the Family" as the best on the market, as it takes up the question in a good, practical way that can be easily understood by the average housekeeper. There is a pamphlet called "Food for Young Children" published by the Division of Publications, United States Department of Agriculture, Washington, which can be had for the asking and which contains many valuable hints on the subject of feeding children. The Child Health Organization, 156 Fifth Avenue, New York City, also publish a series of bulletins on the feeding of children, and the Associations for Improvement of Conditions of the Poor, New York City, publishes a bulletin, "Food Requirements for Children." This last named bulletin will be sent by the Association upon receipt of twenty-five cents. All of these will be very helpful to you in your work.

Note: In connection with Miss Leatherman's talk demonstrations of method of cooking rice, making jelly for very small children, and baking bananas, were given.

FOOD AND FOOD PREPARATION.

By Miss Jeanette Leatherman.

In cases where children cannot be made to drink milk the mother has to use all sorts of schemes to get milk into the diet. We recommend one quart of milk a day for the diet of a child from one to six years of age. A child under six years of age should have no meat at all if it drinks one quart of milk a day; it should also have one egg a day.

Cream Soup.

Cream soup is nothing more than white sauce with the addition of finely cut vegetables. If it is practicable you can thicken the soup with the yolk of an egg instead of flour or you can put one whole egg in one serving of cream soup if you want it for a person who is building up.

Q.—What is the best way to make it without curdling?

A.—You must put the egg in the last thing before serving. Do not cook the egg at all, pour it over the soup.

Q.—Don't you cook the vegetables separately in making cream soup?

A.—Yes, you cook the vegetables very thoroughly until very soft; then drain. In cooking your vegetables, except potatoes, you retain the water in which they are cooked, drain through a sieve then add the white sauce.

In making cream of tomato soup put in a little soda, but this, of course, is not very good for any one who is ill; use only as much soda as you can get on the end of the spoon. In making cream soup it is always better when it is combined the last moment before serving.

Cream soups will evidently be very hard to introduce in many homes, as they require the use of a lot of dishes and are very mussy. The best kind of sieve to get is not the wire one, but the metal one, which you can sometimes obtain for ten cents. Rub the vegetables through the sieve with a wooden potato masher, rubbing the vegetables round and round.

For the adult in the family, if you want to introduce milk into the family in the form of a soup, chowder is the most nutritious. I have a receipt for cream chowder which can be made from dried corn or canned corn. For people who are accustomed to using cod fish, fish chowder is very good; it will take the place of meat for a meal. Fish flakes will also serve the purpose. Burnham and Morrell's Fish Flakes is a mixture of cod and haddock; it is very economical. These fish flakes can be served creamed or combined with tomato. People ought to use more fish. They seem to be afraid of canned fish, but under the present method of canning we need not be afraid of canned fish. The heartiest cream soups are the ones made with peas and beans; they have more protein in them. You must remember, however, that while it is all right to substitute them in a diet for meat you could not feed people on beans and peas exclusively as they are poor for growth. You will find in a great many of your foreign districts people who cannot get fresh milk and Dr. McCollum says as far as he knows there is no difference in dried milk or canned milk.

Q.—Can you use dried milk for cream soup?

A.—Yes. Dried milk has to be mixed about one hour ahead of time, mixed with an egg beater. Up until last March you could not get it retail. The Government then used the entire output. The best quality is Merrell-Soule, Syracuse, N. Y., it cannot be bought at stores. They have a special offer now which they are running through the Saturday Evening Post—\$1.00 for carton of milk and an egg beater. When we bought it at retail it cost 16 cents a quart. Use fresh milk if you are sure of the quality, but if you are working with people who do not keep ice it is better to use the dried milk as it will keep a much longer time than evaporated or canned milk.

Q.—Would you prepare it when you are ready for feeding?

A.—Preferably one hour before.

“Klim” is the name of skim milk, and there is “Krystatch” which is whole milk and “Honor Brand” which is whole milk. If you cannot get it at the drug store you can write to the manufacturer direct.

As stated, if you are working with foreign people who cannot keep milk it is better that they use this.

Q.—Is it expensive?

A.—It amounts to 16 cents a quart, it is more expensive than fresh milk but there is no danger of any waste. We want to discourage the use of canned milk, as people do not use the milk properly. They use it out of the can.

Dr. McCollum states that skim milk will keep four or five years as the fat is what makes it rancid.

Q.—What is the value of powdered eggs?

A.—I do not know, I have never used them.

Q.—I have used them quite extensively in my experience, they are very inexpensive. I think they cost just two cents apiece.

Q.—Is it the whole egg.

A.—I don't know, I wanted to know what the value of the egg was.

It may be successful in cooking, but I have been given the impression that the food value was not there. I think they are made out of cream. They are evidently adulterated. As I said before, they may be all right for cooking but if you are feeding a person use the egg itself.

I know that you will have difficulty in making the foreign people use milk at all or increase the use of milk. Everywhere you go they say they cannot afford milk; it is your duty to preach it and to try to get them to realize that there is no substitute for milk. There is nothing to take its place in the diet of children. Milk contains the chief source of lime, which children need so much to build strong teeth and bone. It also has a small amount of iron in it and that too in a very valuable form, very easily used by the body; it has the complete protein in it and carbohydrate in a very complete form.

Work against the use of condensed milks for children, as they are sweetened with cane sugar.

I want you to get the foods that contain Fat Soluble A, it is found in the cream of milk, in egg yolks, in organic fats, like the fat around liver and kidney, the little bit of fat around the beef kidney and any leaf green vegetable.

Water Soluble B is necessary also in the diet to maintain health and in a mixed diet you have no trouble to get it.

The fat from Cod Liver Oil and chicken liver is all right for children.

Q.—How do you cook chicken livers?

A.—Stew them in water and make a little gravy; the best way to do is to boil them.

The small children in so many families are eating the same things as their parents. They do not seem to realize that a child's digestive apparatus is immature, the same as the child's body. You do not expect a child to do the same work as a man, yet some people expect a child to digest the same kind of food as a man. I suppose you are familiar with the size of a baby's stomach—(Illustration shown).

Fat Soluble A is much more rare than Water Soluble B.

Q.—What do you do if you cannot get a child to take the amount of milk that is needed? There are many children you cannot get to take a quart of milk a day.

A.—You will have to work toward that point gradually, give it in the form of junket.

Q.—I would like to have a particular reason for taking egg albumin out of the diet of a child.

A.—There is no objection to giving a child $1\frac{1}{2}$ to 2 years of age an egg.

The child needs the calcium in milk. We hesitate to recommend a standard formula for feeding babies.

You must urge the use of milk in the diet of adults; every adult could do without meat entirely if he got one quart of milk, an egg and a piece of cheese a day. Every adult should have at least one-third of a quart of milk a day. Of course if you increase the milk you can decrease the meat diet.

Butter milk has practically the same meat value, except that it does not have the same fat value.

Q.—Do you recommend goat's milk?

A.—Goat's milk is ideal for babies. The reason goat's milk is recommended for babies is that the goat is not attacked by tuberculosis germs, but I would not recommend its use. One reason is that we should preach milk, so as to build up the dairy industry, as it is in a precarious condition. The cost of food stuffs and of labor have enormously increased during the last few years and consequently the cost of milk production. Advance in the cost of milk to the consumer has been unavoidable. Every advance, however, has met with great resistance by the public and with each rise there has been a distinct drop in the amount purchased.

I should like to read you a short quotation from Dr. McCollum's book "The Newer Knowledge of Nutrition"—"An examination of any large groups of people in the cities, will show that where there is a high mortality from tuberculosis, milk is not being used in any great extent, and in large groups where milk purchases are large this disease is not a menace. It is well known that in institutions where tuberculosis is successfully treated, milk forms the principal article of the diet of their inmates. This has resulted from clinical experience. There is no other effective treatment for this disease than that of providing fresh air, insisting upon rest and heightening the body's powers of resistance through the liberal use of milk for the correction of faults which the diet will inevitably have when it consists too largely of seed products, tubers, roots and meats. The impor-

tance of diets of this character in the etiology of tuberculosis, has not hitherto been appreciated. In the light of facts presented in the previous chapters of this book, there can be no reasonable doubt that the importance of poor ventilation has been greatly over-estimated, and that of poor diet not at all adequately appreciated as factors in promoting the spread of this disease. Milk is just as necessary in the diet of the adult as in that of the growing child. Any diet which will not support normal development in the young will not support optimum well-being in the adult. Milk is our greatest protective food, and its use must be increased. The price must be allowed to go up, so long as the cost of production makes it necessary, and up so far as is essential to make milk production a profitable business; unless this is done the effects will soon become apparent in a lowering of our standards of health and efficiency."

He states further that the world can be divided into groups; both of these have derived the greater part of their food supply from seeds, tubers, roots and meats, but have differed in respect to the character of the remainder of their diets. One group, represented by the Chinese, Japanese and the peoples of the Tropics generally, have employed the leaves of plants as almost their sole protective foods. The other group includes the peoples of Europe and North America and a few others.

They also have made use of the leaves of plants, but in a lesser degree, and have, in addition, derived a very considerable part of their food supply from milk and its products.

Those people who have employed the leaf of the plant as their sole protective food are characterized as small of stature; by relatively short span of life; by high infant mortality. The people who have made liberal use of milk, have, in contrast, attained greater size, greater longevity and have been much more successful in the rearing of their young.

Out in the country the farmer would sell his milk for 5 cents a quart, because he had more than he could use. Milk at 20 cents a quart is a cheap food when we compare it with the other foods.

The "Protective Foods"—Milk and Leafy Green Vegetables.

Cream of Spinach Soup.

- 1 quart or three-fourths can spinach.
- 4 tablespoonfuls fat.
- 4 tablespoonfuls flour.
- 1 quart of milk.
- Onion juice—salt and pepper.

Wash spinach and cook in covered pan without water 10 minutes, stirring frequently. Rub thru strainer.

Make a white sauce, add spinach water, season with salt, pepper and onion juice.

Corn Chowder.

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| 1 can of corn. | 1 small onion. |
| 3 potatoes. | 1 tablespoonful fat. |
| 2 slices of salt pork. | 4 cups of milk. |
| Salt and pepper. | |

Cut pork in small pieces, put it in a kettle and cook until crisp—add potatoes and onion in small pieces. Cover with water and cook until tender—Add corn and milk—cook 15 minutes—Season with salt and pepper.

SOCIAL SERVICE.

Mrs. Martha Magee, State Organizer, Home Service Section of the American Red Cross.

(Abstract).

The speaker began her discussion by suggesting that we think of the population of the universe in terms of the family; that we consider the normal family needs. She divided these general requirements of normal family life into Health, Education, Employment, Recreation and Spiritual Welfare. When the needs of the family in these respects have all been met there is no further need for effort, but they are never met. The Department of Health is necessary in looking after the health welfare of a family; likewise the Department of Education is also necessary.

Many organizations are employed to work together in bringing about the best relations of individuals to normal life but organizations are also needed to meet the needs of the family. In the large cities these are often well provided for but many counties lack these organizations. What does the community offer for the family needs? What are the State organizations? What are the State laws relating to employment, education and sanitation? What are the resources and industries of the community? The speaker related the various activities of the Red Cross, particularly in the Pennsylvania-Delaware Division, during the recent war, giving details and statistics and she pointed out that the Civilian Relief Division is the Department designated to administer relief after disasters and that it is also its duty to look after families of men in the service. She pointed out the necessity for chapters and members in every town. She emphasized the point that ordinarily the American Red Cross believes in Service rather than Relief.

Will you not work for us in your county? We need local support. We provide a hand-book of information containing everything of importance to the people. Our peace program provides for a large information service, particularly the local service. Our hand-book conveys such diverse information as the Resources of Pennsylvania and What to do in case a man in the community becomes insane.

We expect to do much along lines of home service and the extension of home nursing and training. We want the Red Cross to be the best friend of every family. If we do not know the conditions of the community and the family our results will be less than we desire them to be. Our workers are absolutely dependent on co-öperation with other agents. Report to us problems which require co-öperation. We need to know the background in order to develop resources in the individual case.

OCCUPATION THERAPY.

Mrs. Frances F. Hinton, Philadelphia, Penna.

(Abstract).

The speaker called attention to the fact that occupational therapy should be particularly interesting to Pennsylvanians because it was first started by the Friends.

She referred to later work in Massachusetts and New York and the recent revival in military and civil hospitals caused by war-time conditions and injuries. The relationship of occupational therapy and mental hygiene was also referred to. Methods of interesting the patients were mentioned and examples of the benefits resulting from the employment of sick or injured persons in appropriate occupation were cited. In the discussion the desirability of providing instructors for out-patients, either in their homes or in established clinic work rooms, was mentioned. A travelling corps of aides, working throughout the State was also suggested. The possibilities of application of the system to children in their homes and to sick or disabled industrial workers was considered and the opinion was expressed that many people would be rendered self-supporting through occupational thereapeutic measures.

**“THE ACTIVITIES OF THE EMERGENCY AID ASSOCIATION
IN COOPERATION WITH THE DEPARTMENT OF
HEALTH.**

Mrs. J. Willis Martin, President, Emergency Aid Association.

Colonel MARTIN—All through this meeting there has been the thought, voiced by yourselves and voiced by the central office, that our work will be futile without the help of the large citizenship of the State, and that we must have the enthusiastic and intelligent co-operation of the various organizations and particularly those which distinguished themselves during the war for efficiency. In that line, it is apt that we should have some words of encouragement in our work from the driver, the leader, and the head of perhaps the most efficient organization in Pennsylvania, an organization characterized by the fact that they said little, advertised less, and did everything, and I am presenting to you Mrs. J. Willis Martin, the head of that organization.

Mrs. J. WILLIS MARTIN—It gives me great pleasure to be here for more reasons than one. I think it has been the dream of some of us who had the pleasure in 1914 of working with the State nurses, of carrying that work out at some future day in a big way. The women of this State have all been interested and have practically done as much and more, and I say that with a great deal of pride, than any other State in the country in this war. We have done our share in the Council of National Defense, the Emergency Aid, and other organizations that have taken part, and we are proud of what the women have done.

Now that the war is over, we feel that the work these women have done should not be the end. We want to take it into every county, town, and borough of the State to back up the work of the Health Department. You nurses are going into a broader field than you have ever had before. You are going to do work in the homes of the people who need it so much, work which you have never touched before. We have seen and heard things in various counties in our travels during the last week that we did not dream of before.

We have been interested in the work in infantile paralysis. In 1916 when the epidemic of infantile paralysis was running wild over the State, in Philadelphia alone we had over one thousand cases. We have had under our care some nine hundred cases. At the very beginning we were stunned by the epidemic, and very few doctors and nurses knew what ought to be done. We had the good fortune, through Dr. Martin, to have Dr. Flexner and Dr. Leavitt come and talk to our Committee, and they told us to keep up the everlasting treatment of these children; to have them go to the dispensary to be treated.

But the trouble was that the families could not get the children to the dispensary. So we had two plans, after the hospital treatment; one was for those who could go to the dispensary, and the other was for those who had to take the treatment in their homes. We had two nurses, who worked through the Visiting Nurse Society, who took lessons in massage at Boston and came back and gave the treatment

in the homes. Dr. Flexner said but one thing "Keep after them. See that they get the treatment." We are very proud and very happy to think that we have now only four hundred and fifty children under our care. We have only seventy active cases which we are watching all the time. The city nurses follow them up and keep us in touch with these children. The Emergency Aid volunteers bring the children to the hospitals for treatment, and we have the other nurses giving treatment in the homes.

A very pathetic case of neglect was called to my attention recently—a girl of eighteen who had infantile paralysis ten years ago. This girl had never seen a doctor. Some quack offered to treat the child for five hundred dollars. That girl is not able to do anything but crawl on the floor and she has done that for ten years. Perhaps if she had been taken early a great deal could have been done. It may be that even now we may be able to do something because she has some use of one leg. In your work now, as you go out into the State and find other cases, if our Committee can be of any service to you along this line communicate with us and we will see what we can do to help. What you are going to do in the way of looking after other cases, we want to stand behind. We don't care anything about the organization. We want to get the work done, and stand behind the doctors and nurses of the State in every way we can.

In some of the counties you have very good committees to help you with clothes and everything you need for your patients. In other places you have not such committees and it is our idea, under the Commissioner, to go wherever there is a nurse and a County Medical Inspector and try to get two of the very best women in that town or community, to take hold and form a small committee or organization, it may just be a part of the Red Cross, to stand behind you in all the things that you need. And that is what we are here to offer you to-day. We will send people to organize if you need, and all we ask is that you tell us who in your community is helping you, so that we can know just what is being done.

If you have not all the help you need we want to give it to you. We will help with money or anything else that you need. It is a great pleasure to tell you that this is the reason I am here to-day to help you in whatever way we can. Mrs. Warburton, the chairman, offers through me the co-öperation of the Emergency Aid.

Colonel MARTIN—We have been proffered help by an organization that does not spend its time talking. While other people are thinking about it, they do it. Here is the splendid offer made to all of us: If there is a county in which there is no apparent help—and it is just a little reflection on the profession in that county not to be able to find it, the Emergency Aid will go in and find it for you, because the help is there. Every county is rich in human ability.

In the organization, in the real business, in the application of that which we have been going over in this meeting (and it had many purposes), it was a get-together meeting, an understanding meeting, and as far as I am concerned in my relation to you, it was to show that I am back of you heart and soul, proud of every endeavor you make. I want each individual of you to know that every good effort is a source of pride and joy to the department, and every good thing you do adds to the strength of the department and of every man in it. That is the attitude of the central office.

Our force is entirely too small to do this work with its own hands and, therefore we must call in all other means of help. The County Medical Inspector is to be the central focus of activities in his county and is to be held responsible for the health affairs in his county; that is he will weigh the conditions which are against health. If he is having too many exanthemata and they are too widely spread, he will hear about it from the central office. Why? Because it is up to him and he will have all the backing of the central office.

We want each County Medical Inspector to have an Advisory Board who will be attached officially to the Health Department of Pennsylvania. It should consist of three doctors and possibly two people who are not doctors, men or women. As a matter of advice, women are frequently more interested, more active, and more intelligent than men in matters of health. This board is not to be merely an ornamental board; it should command the respect of the community and should be a board every member of which has plans to contribute to your constructive policy. Again, I would like each man to submit the names which he thinks would add strength and efficiency to his policy.

In the central office we also have a list of names of men who worked during the war, and we will try to select no one who will be objectionable to the County Medical Inspector. We ask the privilege of changing the names submitted without hurting any one's feelings. We want a board of five central advisers, in some of the counties at once and ultimately in all of them. There will be one or more nurses attached to the County Medical Inspector's office. Her duties will be perfectly simple—the health of the citizens of that county. She will be used as a trouble maker, a nuisance inspector, and as a health officer at times. She will be used as a goad, and a sting, and a whip, an encouragement and a lure to health authorities toward a standard of higher efficiency. She will be the eyes, and the ears, and a part of the intelligence, and sometimes a major part of the intelligence, of the County Medical Inspector.

Now your work will consist, first, of reference to your Advisory Board in regard to your policy. First, the laying down of your policy for cleaning up your county. You will get, each month, a report of the morbidity and the mortality of your county. You will get from the central office some model health ordinances which should be passed by your local health authorities, and which you should have passed, if possible. It can be accomplished in some cases by going to your local Board of Health and telling them that it is a good thing, and that they had better do it. Sometimes they will do it, and sometimes they will not. They will say "It interferes with the milk men and the garbage men," and so on; but the answer is the intelligent citizenship of that place. None of the health officials can stand against the intelligent forces of that place and that force will be represented mainly by the educated women.

Organized women is a new force, and perhaps one of the most powerful we have for good in our country. Get your organization together as one of your first objectives. The church organizations, the Red Cross, the Emergency Aid, the Rotarians, the Chamber of Commerce all agree to help, and with those bodies united a good thought is to have each of those organizations appoint one member on a central committee and turn them all loose on health. With that organization

you can clean up any section of the State by the united intelligent force of that community. The attitude is to drive the community to do what it ought to do, which means constant supervision and follow up. The Emergency Aid has just given us an example of what this means in infantile paralysis. They have untiringly followed on day after day, month after month, and year after year. It cost them no money. All they had to do was to reach out and get an organized force, and the people were glad and proud to help. Every family and every girl that did that work had a greater benefit to themselves than they conferred on those poor people. Instead of having six, seven, or eight hundred cripples, every one will be a good citizen and able to support himself. It was done by a steady, clear concept of what was desired, and a determination to get it. The Emergency Aid has the tenacity and persistence of a bull dog, and the intelligence of a human being.

You produced in me a form of intoxication, a form of elation, a form of "dead sure it is coming," and it makes me proud to head an organization like this Department of Health. It is enthusiasm that makes us start things. It will die out and you will forget this camp life. It is the day by day, week by week, and month by month effort that will wear you down, but the thing must be done and the thing can be done. The weakling can come here and go away with a hurrah, but it takes a real man—and a real woman—who never gets tired to get results; and I know we are going to do it. The original drive comes from the central office. If you don't get it, the central office is going to be disagreeable. If you do get it, we are going to be enthusiastic. You must drive and drive untiringly.

We can never get tired in this work of life and death. There will be troubles and obstacles and difficulties; and finally there is a great big club at the central office and we are prepared to use it if we have to; but if we have to use it too often in the same place it will look as if you are not using the proper methods. It is almost never necessary to make threats. Never begin by force. It is a big thing and a splendid thing that we are after, and every one wants the right thing. If you have to make a threat, it is better to hit first. Never begin by threatening. If you have to use force, we are plenty strong enough to land a solar plexus blow now.

So much for the opening. The rest of the day is up to you. To-day, then, is a get-together-day on all your local troubles, of which the central office knows little, but wishes to know more.

FINANCIAL OPERATIONS AND SUPPLIES.

THE FINANCIAL OPERATIONS OF THE DEPARTMENT—C. T. Williams, Chief of Division of Accounts.

THE DEPARTMENT SUPPLY SERVICE—Roy G. Miller, Chief of Division of Supplies.



THE FINANCIAL OPERATIONS OF THE DEPARTMENT.

C. T. Williams, Chief, Division of Accounts.

The Department of Health started in 1905 with an appropriation of \$368,000 and climbed to the sum of \$5,250,000 for its last appropriation, covering the two year period from June 1, 1917 to June 1, 1919; with an estimated equal amount for the next two years. This datum gives you some idea of the financial responsibility of the Commissioner of Health in watching and fulfilling the tasks of disbursing this appropriation in an effective and business-like manner.

The Department of Health receives a certain sum appropriated to the Commissioner of Health to be used as he deems necessary, under the laws, and this demands the utmost care in apportioning certain amounts for the different Divisions, in order that he may hold within the amount appropriated to the Department of Health.

It is an easy matter to keep a rather accurate account of expenditures when you are in personal contact with your employes, as is generally the case with most corporations; and we may consider this department a corporation at this time. The Department of Health has in the neighborhood of 6,000 employes distributed all over the State, which means that close co-operation in the matter of taking up daily routine expense accounts is impossible. This throws a greater responsibility on the department in keeping its expenditure record as accurately as possible and the responsibility is passed on to the different employes to render from time to time, according to the regulations of the department, as clear an expense account as if they were rendering a medical report.

A delay has prevailed in the past that I suggest should be remedied. Some vouchers covering expenses in a certain month have not been received by the Division of Accounts until four or five weeks after they were incurred. This has a tendency to work against the efficiency of the department by keeping the Commissioner in ignorance of its actual expenditures. If vouchers were mailed to the department by the tenth of the following month it would better this condition.

Another point I wish to bring to your attention embraces the expenses incurred at the different dispensaries covering telephone, gas bills, electric bills, etc. These bills are often paid by the doctor, nurse and even the janitor, and they in turn render them on their monthly expense voucher; there has been no end of trouble in making settlement of this class of bills, and I would suggest, if it meets with proper approval, that in the future these bills when mailed from the different companies be sent direct to the Dispensary Chiefs, approved at once and then mailed direct to this division, where a voucher could be made up and payment check mailed direct. In the past many vouchers sent out for approval have either been delayed in transit or for some other cause have not been returned to this division until after the discount date; consequently under the rules given the companies by the Public Service Commission we are unable to take advantage of this discount. This may seem a trifling matter, but in a large department like this, these small items would represent quite

a large saving if these discounts were taken when due. However, I will say that the doctors and nurses are filing their expense vouchers much sooner than they did a year or so ago.

It should be the policy of the chiefs of the different divisions, when instructing new employes, not only to teach them how to disinfect, placard and make proper inspections, but also to make clear reports covering their daily expenses.

The township Health Officer should also be instructed that when he renders any services in a borough he should always file with his regular daily report, a report of services in said borough on Form 89. The Health Officer is paid by this department for such services, and every six months a bill is made up from his report covering borough work by him, and submitted to the borough for payment. Some thousands of dollars have been collected and turned into the State Treasury as a credit to this department covering this work. Unless the Health Officer is properly instructed on this point it may be overlooked, and if he does not file with us properly itemized accounts for this work, we are at a loss to know just what to bill the borough in order that the department may be reimbursed.

It may be of interest to you to know the course taken by the voucher which you submit to the department for payment. As the first step, it is placed before the auditors to check up extensions, proper receipts and any excessive charges: next, it is placed before the chief of the division in which the work is done. After his approval it is passed on to the bookkeeping department for entry to the individual account. Thus, at any time, the department has access to an itemization of any employe's account: the check is then made out in payment of the voucher: the voucher is analyzed in order that the costs of the different diseases, each dispensary and each institution may be ascertained: finally an accounting is made to the Auditor General's Department at the end of each month, filing these vouchers for credit to the Department of Health's appropriation.

DISCUSSION.

In reply to various question Mr. Williams spoke of the per capita cost per month for dispensary patients, approval of Health Officer expense vouchers by County Medical Inspectors, gas bills, telephone bills and changes caused by the separation of the Divisions of Accounting and Purchasing. He again emphasized the necessity for the prompt rendering of charges incurred.

THE DEPARTMENT SUPPLY SERVICE.

Roy G. Miller, Chief of Division of Supplies.

On November 4, 1905 the Division of Biological Products was created by the Pennsylvania Department of Health for the distribution of free antitoxin to the indigent of the State.

This division was merged with the Division of Supplies on March 15, 1919 by our present Commissioner of Health in order to centralize all supplies in one division and under one head.

This division furnishes all of the different drugs for the Tuberculosis and Genito-Urinary Dispensaries—(these supplies were formerly dispensed from the Philadelphia office)—and all printed forms, fumigators, doctors' and nurses' gowns, sputum cups, paper napkins and any equipment necessary for the advancement of the good work of this department.

Our laboratory tests are distributed free to all physicians in this Commonwealth, in six outfits as follows:—

Laboratory No. 1—Blood Test for Malaria.

Laboratory No. 2—Widal Test for Typhoid Fever.

Laboratory No. 3—Sputum, Urine, Growths, Etc.

Laboratory No. 4—Culture Tubes for Diphtheria.

Laboratory No. 5—Wassermann Test for Syphilis.

Laboratory No. 6—Gonorrhea Smear Outfit.

Requests for outfits must be made out on our Form 302. These forms will be furnished to any doctor, upon receipt of letter requesting same.

After specimens have been taken by the physicians the outfits are to be sent to our Laboratory in Philadelphia and not to this Division in Harrisburg, as is frequently done.

When ordering supplies, use our Form 910. This form is kept by the division as a record of goods shipped. As nearly as possible and for the sake of economy in shipment, all your needs should be anticipated and orders should be placed on the first or 15th of the month. In placing orders it will facilitate the work of the department if you will state clearly the quantity desired, giving the form number and if possible the name of each article. Do not make your requisitions for larger quantities of supplies than you absolutely need for the month. Order twice a month if necessary and acknowledge receipt of shipment. Sign all requisitions and give correct address.

Biological Products are distributed free to the indigent of the State, in four distinct products as follows:—

First:—Diphtheria antitoxin is furnished through our 688 distributors, nearly all druggists, located at convenient points in each county throughout the State, except in the cities of Philadelphia and Pittsburgh. In addition to the curative doses of five and ten thousand units, repeated as needed, antitoxin is furnished free to the indigent, in immunizing doses of 1,000 units strength, with which physicians are instructed to immunize all contacts.

Second:—Vaccine and vaccine supplies are furnished upon requisition of the County Medical Inspectors for the poor of townships not of the first class, routinely to the various tuberculosis dispensaries of the department, to poor charitable institutions, when asked for during a local or general epidemic of smallpox, and as may be otherwise ordered by the Commissioner.

Third:—Tubercle Bacilli Products. The distribution of these products is by the department upon requisition of the physician-in-charge of the Tuberculosis Dispensary and the extract is now put up in dilutions from No. 1 to No. 20 and the suspension in dilutions from No. 1 to No. 16.

Fourth:—Tetanus antitoxin is furnished to the poor of the State through 68 distributors, at different points in every county, but not in the cities of Philadelphia and Pittsburgh. The distribution of this product was begun in 1910 in anticipation of the dangers of approaching Fourth of July. The distributors are continually stocked, in order to make the antitoxin easily available for those who might be injured at other times. In this connection it may be well to state that the reason for the small number of tetanus distributors, as compared with the number of diphtheria antitoxin stations, is because tetanus antitoxin if given within forty-eight hours after injury, is effective, and the tetanus stations are so located as to be accessible to nearly every locality in the State within twenty-four hours.

Antitoxin in curative and immunizing doses may be secured by physicians practicing in this Commonwealth upon agreeing in writing that no charge of any kind is to be made for the antitoxin, and that the persons for whom it is obtained are indigent in the sense that they cannot procure the necessities of life and at the same time purchase antitoxin. We have at different times received communications from physicians asking who, in our opinion, are entitled to free antitoxin. In answer to this question, we believe that families having an income of one hundred dollars per month, and without other support, are indigent cases and are entitled to free antitoxin.

A physician having a case of diphtheria among the poor should immediately apply to the nearest distributor, sign a receipt and secure all the antitoxin needed for the treatment of the case. He agrees to return to the distributor all unused antitoxin within ten days after securing same. In signing this receipt the physician certifies that the persons mentioned, for whom this antitoxin is furnished, are indigent and in a sense cannot procure the necessities of life and purchase antitoxin. Our experience along this line has taught us that 20 per cent. of these cases are not indigent and are able to pay for these biological products. Permit me to appeal to this large body of representative physicians and nurses of the State Department of Health to lend your cooperation and let me suggest that you instruct the local physicians of your respective districts, through the medical societies, how to secure these biological products and insist that they are intended for the poor only; and that they return to this division all clinical reports immediately upon termination of each case. We have experienced considerable trouble in the past with physicians holding these clinical reports from six months to one year. This retards the work of our department in compiling the monthly statement to the Commissioner, our annual report and is a hindrance to our system of bookkeeping. Antitoxins are not distributed free to

hospitals unless those suffering with diphtheria are free patients. All State Institutions and Hospitals receiving State aid are now permitted to purchase biological products from any of our depots at the same price the Department of Health is paying.

The plan and agreement of the laboratories furnishing these hospitals and State Institutions, will be to permit the regular department distributors to supply the antitoxin from their stock as it is needed and report sale to our division in Harrisburg. The laboratories after being informed of the sale, will render a credit memorandum to our department for all antitoxin used. The laboratory will then assume entire collection of the account and bill same direct to the hospital or institution receiving same.

In conclusion I wish to state that our 688 distributors are giving their services free in issuing these biological products and I again appeal to you, as representative doctors and nurses of this great Department of Health, to get in communication with all your nearest distributors and lend them your assistance in every way possible.

One of the greatest weaknesses of our whole organization lies in the lack of intimate contact between the office force inside and our representatives in the field.

These distributors are your allies. Encourage them, so that they will have a greater incentive in doing this work. If you will do this it will aid the Department in making this administration successful.



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SYNOPSIS OF

PENNSYLVANIA

HEALTH

LAWS

Commonwealth of Pennsylvania
DEPARTMENT OF HEALTH
1920

1. The first part of the document is a list of names and dates, which appears to be a record of some kind. The names are written in a cursive script, and the dates are in a more formal, printed style. The list is organized into two columns, with names on the left and dates on the right.

**SYNOPSIS OF
PENNSYLVANIA HEALTH LAWS
WITH
Advisory Board Regulations, Collateral Laws, Rulings
and Model Ordinances**

**Edited by
THOMAS W. JACKSON, M. D.
Assistant to Commissioner of Health**



PREFACE.

The municipalities of Pennsylvania consist of Cities, Boroughs and Townships of the First-Class.

Of these the Cities are classified according to population. A First-Class City is one with a population of one million persons or more. A Second-Class City is one with a population of one hundred thousand persons or more and less than one million. A Third-Class City is one with a population between ten thousand and one hundred thousand persons. A Second-Class City automatically becomes First-Class and Third-Class Cities automatically become Second-Class when they attain the required population, as determined by a United States Census.

Pennsylvania Boroughs correspond in a general way to towns or villages in other States. A Borough is a corporation having a charter for municipal purposes and a unicameral legislative body, the Borough Council. The official head of a Borough is the Burgess. Generally speaking the Borough is the smallest form of municipal corporation, although there are numerous Third-Class Cities of less population than certain Boroughs in Pennsylvania and there is no definite size limit fixed for Boroughs. Pennsylvania has but one town but Borough Laws in general apply in this municipality.

Townships of the First-Class are those with a population of three hundred persons to the square mile. They are governed by Boards of Township Commissioners. The President of the Township Commissioners functions as a burgess. Townships do not become First-Class Townships automatically upon attaining a population of three hundred persons to the square mile; a vote of the people being necessary for the formation of a Township, or any part of it, into a First-Class Township.



PART I.

This synoptic compilation of laws is intended for use in connection with and somewhat as an index to the Digest of Health Laws published in 1916 and supplemented by two bulletins containing the Health Legislation of 1917 and 1919. (Bulletins 97 and 103).

With these two bulletins attached the Digest should be used whenever the exact law is desired, making such reference as need be to the Pamphlet Laws of the State. These Pamphlet Laws are indicated in the references by the letters P. L. with the year and date of enactment. The number following the letters P. L. is the page number in the volume of Pamphlet Laws for the year indicated. The page given is that upon which the act of assembly *begins*.

As the source of full legal information must ever be the printed statutes of the State, the Digest and the supplementary Bulletins, with the Pamphlet Laws, should be freely consulted.

For certain laws this synopsis has been subdivided into headings of PURPOSE; PENALTIES; COURTS BEFORE WHICH ACTION IS BROUGHT; ACTS OF ASSEMBLY; and THOSE RESPONSIBLE FOR ENFORCEMENT. Enabling acts and similar legislation do not permit of such subdivision. While the convenience of the reader has been kept in mind it is not wise to carry condensation and subdivision beyond the point attained in this synopsis.

PART II.

Included as Part II are the Regulations of the Advisory Board, all of which, being duly promulgated, have the force of law. The regulations have not been condensed.

PART III.

In Part III are found orders, rulings and instructions issued from the central office of the Department of Health.

PART IV.

In Part IV are found the model or sample ordinances prepared in the Department of Health and approved by the Attorney General's Department.

They are intended as guides for communities undertaking the regulation of housing, milk supply, plumbing, garbage disposal and nuisances, by local ordinances.

In this section is also found reference to additional laws, collateral to the Health Laws but not found in the Department Digest. These laws pertain more or less directly to the work of the different Divisions of the Department of Health and are listed separately by subject, act of assembly and date of enactment in groups arranged for the convenience of the divisions and bureaus concerned.



PART I.

SYNOPSIS OF PENNSYLVANIA HEALTH LAWS.

Note:—

Requests for copies of Acts of the Legislature should be addressed to the Secretary of the Commonwealth and not to the Department of Health.

School laws (School Code and amendments) are published in book form and the codified Borough Laws with appendices and index are assembled in a volume known as the Borough Law.



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ADVERTISEMENT.*

Of Nostrums and Medicines for Abortion, Miscarriage or Cure of Venereal Diseases.

Disposal of Trial Samples of Medicines, Dyes, etc., to Children; Or Throwing same into Yards.

(1) *Purpose.* Makes it unlawful and a misdemeanor to print, write or publish or cause to be published or circulated, advertisements of medicines, drugs, nostrums or apparatus for cure of secret or venereal diseases or diseases peculiar to females.

Makes it a misdemeanor to print, publish or cause to be published advertisement of any secret drug or nostrum purporting to be for use of females; or to sell, keep for sale or give away, any secret nostrum, medicine, instrument or apparatus for purpose of preventing conception or procuring abortion or miscarriage; or in any way to publish or circulate any obscene notice.

(PROVIDED, That this shall not be construed to affect teaching in regular chartered medical colleges or publication of standard medical books).

Makes it unlawful to deposit, cast, throw or distribute any package, parcel or trial sample of any medicine, candy, dyeing, ink, coloring or polishing compounds, upon the ground, sidewalks, porches, house, building, veranda, portico, under windows or doors or upon street or public highway in such a way that children may secure or get possession of the same.

(2) *Penalties.* For violation of provisions of advertising clause, etc., a fine not exceeding \$1,000.00 or imprisonment, not exceeding six months, either or both.

For violating provisions concerning the distribution of sample medicines, candies, etc., a fine of not exceeding \$100.00 or imprisonment not exceeding one year, either or both at the discretion of the court.

(3) *Courts Before Which Action is Brought.* Alderman, Justice of the Peace or Magistrate. Court of Quarter Sessions.

(4) *Acts of Assembly.* Sections 1 and 2, Act of March 16, 1870, P. L. 39.

Sections 1 and 2, Act of May 2, 1901, P. L. 111.

Sections 1 and 2, Act of May 8, 1907, P. L. 181.

Act of July 21, 1919, P. L. 1084.

(5) *Those Responsible for Enforcement.* Chiefs of Genito-Urinary Division and Drug Control Division and their staffs. Officers of State Department of Health and every Board of Health or Health Department in communities where law is violated.

* (Digest of Health Laws, page 5.)

ADVISORY BOARD; * DEPARTMENT OF HEALTH.

Appointment of;
Quorum and Meetings.

(1) *Purpose.* Statute creates as part of the State Department of Health an Advisory Board of six members, a majority of them physicians graduated from legally constituted medical colleges and of ten years experience in practice; one of the members to be a civil engineer. They shall be appointed by the Governor with the advice and consent of the Senate for four years. Three, together with Commissioner of Health, shall constitute a quorum; none shall receive salary other than actual expenses. Board shall meet on call of Commissioner of Health and advise Commissioner of Health on matters brought before it by him; draw up such reasonable orders and regulations as are deemed by Board to be necessary for prevention of disease and protection of lives and health of people of Pennsylvania and the proper performance of other work of the Department of Health.

Act of Assembly.—Section 5, Act of April 27, 1905, P. L. 312.

BIRTHS (See VITAL STATISTICS).**BOARDS OF HEALTH, GENERAL.***

Licensing of Lying-in Hospitals, Wards or Private Places by Boards of Health;

Adopting of Rules and Regulations for Housing, Drainage, Cesspools, Plumbers, etc.

(See also Bone Boiling; Boroughs; Cities of Third Class; Commissioner of Health; Garbage; Indigent Sick; Milk; Nuisances; Physicians; Quarantine.)

(1) *Purpose.* Authorizes Boards of Health to license a person or persons to establish and keep a lying-in hospital, ward or other private place for the reception, care and treatment of women in labor; requires written application, endorsement by six reputable citizens of county and provides that place be used only for legitimate, moral and charitable purposes; that applicant be suitable person and premises be suitable; license for two years and payment of a fee of \$5.00 provided for, license revokable by Board of Health; proprietor to keep records; place to be subject to visitation and inspection by Board of Health or special officer appointed by court upon petition. Keeping such hospital, ward or other private place for lying-in purposes without license is made a misdemeanor.

Authorizes and directs adoption and promulgation, by Boards of Health in cities and boroughs of Pennsylvania, of suitable rules and regulations for construction of house drainage and cesspools, registration of journeymen and master plumbers and persons engaged in the plumbing business. Provides that law shall not apply to boroughs which have no water supply system or sewerage system. Refusal or neglect to comply with such rules when promulgated is a misdemeanor.

* (Digest of Health Laws, page 6.)

(2) *Penalties.* For conviction of first offense of violation of this law a fine not exceeding \$200.00 and imprisonment of not more than a year, or either or both, at discretion of court.

For conviction of violation of house drainage and cesspool clause of act, a fine of not more than \$100.00 or imprisonment not exceeding one year, or both, in discretion of the court.

(3) *Courts Before Which Action is Brought.* Alderman, Magistrate, Justice of the Peace or Court of Quarter Sessions.

(4) *Act of Assembly.* Section 1, Act of April 26, 1893, P. L. 21. Sections 1 and 2, Act of June 24, 1895, P. L. 232.

(5) *Those Responsible for Enforcement.* All Boards of Health in Pennsylvania.

All city and borough Boards of Health in Pennsylvania, (1) for adoption and promulgation of rules and (2) for prosecution of violators of the law.

BOARDS OF HEALTH IN BOROUGHS AND FIRST-CLASS TOWNSHIPS.*

Appointments, Organization, Officials, Powers, Rights and Duties.

Right of Entry, Inspection, Reports and Estimates, Expenses and Those Not Eligible.

(1) *Purpose.* Provides for five members, one to be a physician of two years experience and practice, appointed by president of borough council or chairman of Board of Commissioners of township, one each for periods of one, two, three, four and five years and thereafter one annually. Members to be residents of the municipality and serve without compensation; except secretary. Provides oath of office, annual organization by election of president, secretary and health officer; health officer may not be member of board; secretary may or may not be a member of board. Provides for salaries of secretary and health officer and ratification of salaries, giving of bond and taking of oath. Defines duties of secretary and health officer and their clerical and financial duties and accountability. Details duties of health officer in regard to quarantine, placarding, inspection, notification, police duties, disinfection and lifting of quarantine. Defines powers and duties of board regarding law enforcement of State and local laws, making and enforcing of additional rules and regulations to prevent introduction and spread of infections and contagious diseases; regulating intercourse with infected places, separating persons, marking infected places, regulating and constructing house drainage and cesspools and establishing emergency hospitals. Empowers board to make, enforce and cause to be published necessary rules and regulations for *carrying into effect* its powers and functions. Such regulations, when approved by borough council and burgess or by township commissioners and advertised as other ordinances have the force of ordinances; penalties and punishments and necessary expenses in carrying into effect such rules and regulations recoverable for use of borough or township. Confers right of entry to board of health and health officer, to premises where there is suspected to be infectious or contagious disease or nuisance detrimental to public health. Confers right of inspection of house drains, pipes,

* (Digest of Health Laws, page 8.)

cesspools, water closets, slaughterhouses, hog pens, stables, stable yards and conditions or places in borough or township which may be a nuisance or a menace to public health. Authorizes issue of written orders of abatement to owner or agent. Authorizes written order to health officer to remove or abate, expenses thereof recoverable from owner. Directs board to submit annually estimates for ensuing year and directs councils or township commissioners to make necessary appropriations; directs board to report annually in writing to councils or township commissioners its operations, expenditures and necessary information; directs councils or township commissioners to publish same in official journal; directs payment by borough or township of all expenses incurred by board in performance of duties imposed by law and all expenses incurred by Commissioner of Health in accordance with Section 10, Act of June 12, 1913. Specifies those who may not serve as members of board.

(2) *Penalties.* (Penalties to be provided by ordinances). On failure of Board to perform its duties Commissioner of Health may set it aside.)

(3) *Courts Before Which Action is Brought.* Justice of peace, alderman, magistrate or court of common pleas. Penalties imposed by boroughs and first-class townships are recoverable by civil suit and not by indictment.

(4) *Act of Assembly.* Act of June 12, 1913, P. L. 471, Sections 2, 3, 4, 5, 7, 8, 9 and 11.

Act of April 14, 1915, P. L. 115, Section 6.

Act of June 18, 1895, Section 20 as amended by Section 1, Act of April 3, 1903, P. L. 138.

(5) *Those Responsible for Enforcement.* Presidents of borough councils and chairmen of boards of commissioners (for appointment). Officers and members of boards of health, secretaries of boards of health and health officers (for performance of powers, duties, inspections, reports and estimates, called for under oath of office). Councils and townships (for making necessary appointments and appropriations.) Boroughs and townships (for payment of expenses incurred by boards of health).

BOARDS OF HEALTH IN CITIES OF THE THIRD-CLASS.*

Appointment; Organization;
Rules and Regulations; etc.

(1) *Purpose.* Provides for Board of Health of five members, two to be physicians of two years experience in practice; members to represent city districts fixed by councils and to serve without compensation for five years. Mayor shall nominate with consent of council, appoint members and in like manner remove members for misconduct or neglect and fill all vacancies. (Act of May 27, 1919, P. L. 310 provides that members, officers and subordinates of boards of health in cities of third-class may be appointed by the council and repeals that part of Article XI, Section 3 of Act of June 27, 1913, which provided that city clerks in cities of the third-class should be ex-officio secretaries of boards of health.) At the first appointment mayor shall designate one member each to serve for periods of one year, two

**(Repealed by Act of June 12, 1913, P. L. 471, Section 11.)*

years, three years, four years and five years and thereafter shall appoint one member annually to serve five years. Prescribes organization of board, by taking oath prescribed for city officers; election of one member as president; election of a secretary, not a member of board, who shall keep minutes of proceedings and perform other duties as directed; directs election of health officer to execute orders of board, with powers and authority of a city policeman. Prescribes that boards shall fix salaries of secretary and health officer and that they shall hold office during its pleasure (appointment of members, officers and subordinates of boards of health modified by Act of May 27, 1919, P. L. 310 quoted above.) Provides that secretary and health officer shall give bond and take oath required of members of boards of health. Provides that all fees collected or received by board, or an officer thereof in his official capacity, and all penalties recovered for violations of board's regulations shall be paid over into city treasury monthly. Authorizes president and secretary to administer oaths or affirmations in any proceedings or investigations touching the board's regulations, without fees. Directs board to make and cause to be published necessary rules and regulations for carrying into effect its powers and functions and provides that when approved by mayor, these rules and regulations shall have force of ordinances and that all penalties for violations and expenses incurred in carrying them into effect shall be recoverable for use of city as in case of city ordinances.

Article XI of Act of June 27, 1913, also provides that the council of any third-class city may by ordinance create a board of health (whose organized powers and duties shall be as provided by laws in force relating to boards of health. It provides also that in any third-class city where council does not elect to create a board of health by ordinance the council itself shall exercise all rights, duties and obligations imposed by law upon boards of health in third-class cities. Where cities of the third-class operate under the so-called commission form of government they exercise the authority relating to health boards here cited.

(Other rights, powers and duties of Boards of Health in Third-Class Cities are as set forth for Boards of Health of Boroughs and First-Class Townships.)

(2) *Penalties.* To be provided by ordinances.

(3) *Courts Before Which Action is Brought.* Justice of peace, alderman, magistrate or court of common pleas.

(4) *Act of Assembly.* Article XI, Section 2, Section 3 and Section 6 of Act of May 23, 1889, P. L. 306.

Article XI of June 27, 1913, P. L. 568.

Act of May 27, 1919, P. L. 310.

(5) *Those Responsible for Enforcement.* Mayors and councils of cities of third-class (for appointment). Mayors and councils of third-class cities (for removals and filling vacancies). Officers and members of boards of health, secretaries of boards of health and health officers, (for performance of powers, duties, elections, reports and estimates, called for under oath of office). Cities of third-class (for payment of expenses incurred by boards of health).

BONE BOILING.*

Regulating Establishments, Depositories of Dead Animals, etc., in Cities, Boroughs or Counties.

(1) *Purpose.* Provides conditions for establishing and operating bone boiling establishments and depositories of dead animals, excluding them from within municipal limits of cities and boroughs unless permission is granted by city or borough board of health, who shall provide regulation governing the conducting of such establishments. Provides that if such establishment exists or is erected and conducted in any county of the Commonwealth it shall be conducted under the supervision of and subject to regulation of State Board of Health (now State Department of Health).

(2) *Penalties.* For violation of law, for every offense and each month's continuance of the same after notice, offending person to forfeit and pay to board of health, if in city or borough, or to school board of the district or township, if in a township, the sum of fifty dollars, and also to be liable to indictment at common law for creating and maintaining a nuisance.

(3) *Courts Before Which Action is Brought.* Court of Common Pleas. Court of Quarter Sessions.

(4) *Act of Assembly.* Act of May 19, 1897, P. L. 77, Section 1.

(5) *Those Responsible for Enforcement.* All boards of health or departments of health in Pennsylvania, (for authorizing and supervising establishments in cities and boroughs and for prosecuting violators).

The Commissioner of Health (for supervising and regulating establishments in counties of the Commonwealth outside of cities or boroughs.

|

BOROUGH.*

Their Powers to Regulate General Health.

Sewer Connections.

(See also Boards of Health; Burial Grounds; Commissioner of Health; Domestic Animals; Milk; Nuisances; Sewage; Sewage and Garbage; Sewers; Toilet-Rooms; and Water Supplies.)

(1) *Purpose.* Provides that boroughs may make such other regulations (additional to those specifically mentioned in laws) as may be necessary for the health and cleanliness of boroughs. Also that they shall establish and maintain boards of health and may by ordinance require property owners to make connections with sewers, enforcing sewerage regulations by penalties; three months' notice is required and borough is empowered, upon failure of owner, to perform connections, which shall be uniform, and to collect costs from owner by a municipal claim or in action of assumpsit. The borough may by penalties enforce any regulations it may ordain with reference to any sewer connections.

(2) *Penalties.* To be provided by borough councils and borough boards of health.

(3) *Courts Before Which Action is Brought.* Magistrate, justice of peace, alderman or court of common pleas.

* (Digest of Health Laws, page 18.)

(4) *Act of Assembly.* Section 2, Act of April 3, 1851, P. L. 320. Chap. VI, Article XII, Sections 31 and 32. Chap. V, Article I, Section 1, XVII, Act of May 14, 1915, P. L. 312.

(5) *Those responsible for Enforcement.* Boards of Health, Health Officers, owners of properties, borough councils and officers.

BURIAL GROUNDS.*

Regulation of, by Courts and Boroughs.

Pollution of Streams by, Prohibited;

Procedure, Care and Transfer of;

Vacation of and Procedure;

Malicious Opening of Graves;

Change of Location; Sale of Land and Application of Proceeds of Sale.

(1) *Purpose.* County Courts of Quarter Sessions are authorized to make orders and decrees regulating burial grounds in and adjacent to incorporated boroughs; to direct removal of dead therefrom; and enforce their orders and decrees. Borough councils may prohibit within partial limits burial of deceased persons and regulate depth of graves. Unlawful to use land for burial which drains into water supply streams of cities, within a mile of city, provided that this prohibition be not retroactive. Provides that a fund of at least one-tenth of amount arising from sale of cemetery lots be set aside for perpetual care of grounds and buildings of cemetery companies. Provides for transfers of titles, etc., of burial grounds from boroughs to incorporated cemetery companies, upon petition of ten lot owners, ordinance of council and acceptance by incorporated cemetery company, acceptance to be recorded. Prescribes methods for vacation of burial grounds; for publication of notice of proposed removal of remains of dead; for removal and transfer of head stones, monuments, etc.; for reinterment of bodies.

Makes it a felony to open maliciously, any tomb, vault, grave or mausoleum and clandestinely to remove body therefrom and prescribes penalty.

Prescribes method of purchase of new grounds, for burial grounds. Prescribes method of change of location of burial grounds. Prescribes method of sale of vacated burial grounds; directs the application and distribution of proceeds of such sale. Authorizes Court of Quarter Sessions to commit care of certain burial grounds to township supervisors and requests townships to pay expenses in connection therewith.

(2) *(Penalties).* For conviction of felony of opening graves and clandestine removal of bodies, not more than one thousand dollars fine or imprisonment by separate and solitary confinement not more than ten years, or both at discretion of court.

(3) *Courts Before Which Action is Brought.* County Courts of Quarter Sessions.

(4) *Acts of Assembly.* Section 2, Act of April 3, 1851, P. L. 320. Section 1, Act of May 13, 1876, P. L. 159. Section 1, Act of June 24, 1895, P. L. 244. Section 1, Act of March 18, 1909, P. L. 41. Section 1, Act of April 23, 1909, P. L. 155. Sections 1 and 2, Act of April

* (Digest of Health Laws, page 14.)

29, 1909, P. L. 291. Section 1, Act of May 5, 1911, P. L. 176. Sections 1, 2, 3 and 4, Act of June 25, 1913, P. L. 551. See Chapter XI, Article I, Sections 2, 3, 4 and 5, Act of May 14, 1915, P. L. 312.

Those Responsible for Enforcement. County Courts of Quarter Sessions, (for making orders). Borough councils and boards of health, health officers, cemetery associations and all police officers (for enforcement and prosecution for violations).

CERTIFIED COPIES.*

(1) *Purpose.* Provides that copies of records, documents and papers in possession of the Department of Health or any of its Bureaus, Divisions, or officers, shall be received in evidence in courts, in place of original records, when duly certified by the Commissioner of Health under the seal of the Department of Health.

Act of Assembly. Sec. 1, Act of May 20, 1907, P. L. 305.

CESSPOOLS (See Boards of Health).

CHILDREN (See Cigarettes; Quarantine).

CIGARETTES.*

**Not to be Furnished to Minors;
Minors Required to Furnish Information.**

(1) *Purpose* Makes it a misdemeanor to furnish any minor by gift, sale or otherwise, any cigarette or cigarette paper and fixes penalty.

Makes it a misdemeanor for any minor in possession of any cigarette or cigarette paper, to refuse to furnish information concerning where and from whom such cigarette or cigarette paper was obtained.

(2) *Penalties.* For furnishing cigarette or cigarette paper, a fine of not less than \$100.00 nor more than \$300.00. For refusing to give information, minor of sixteen years or upwards shall be sentenced to a fine not exceeding \$5.00 or to undergo imprisonment not exceeding five (5) days in jail or both. If such minor be under the age of sixteen he or she shall be certified by alderman, magistrate or justice of the peace to the juvenile court of the county for action by the court. (The second section of this Act should not have been made a misdemeanor because the court officers named, alderman, magistrate or justice of the peace, do not have final jurisdiction over misdemeanors.)

(3) *Courts Before Which Action is Brought.* County Courts of Quarter Sessions, (for furnishing cigarettes, etc.) Any alderman, magistrate or justice of the peace (for failing to furnish information).

(4) *Act of Assembly.* Sections 1 and 2, Act of May 9, 1913, P. L. 198.

(5) *Those Responsible for Enforcement.* All police officers, constables, juvenile court officers, truant officers and school teachers.

* (Digest of Health Laws, page 20.)
* (Digest of Health Laws, page 21.)

CITIES OF THIRD-CLASS.*

Powers;

Duties Relative to Boards of Health.

(See also Boards of Health; Infants; Burial Grounds; Milk; Nuisances; Sewage; Toilet-Rooms; Water Supplies.)

(1) *Purpose.* Every third-class city authorized and empowered to enact ordinances for sewer construction, reconstruction and extension beyond city limits, and to take, occupy and compensate for necessary private lands and property; to regulate bathing in public waters adjoining city; to regulate running at large of animals; to make regulations for enforcement of Commonwealth Laws and State Health Department orders, for control of communicable diseases, for securing of general health and abatement of nuisances; to make and enforce quarantine laws; building inspection; to create boards of health and health departments pursuant to existing legislation. Provides that when councils of a third-class city shall not elect to create a board of health, the legal rights, duties and obligations of a board of health shall be exercised by the council.

Act of Assembly. Art. V, and Art. XI, Act of June 27, 1913, P. L. 568. Sec. 33, Act of May 27, 1919, P. L. 310.

Those Responsible for Enforcement. All mayors, city councils and Departments of Health.

COCAINE (EUCAINE).*

Not to be Sold, Furnished or Given Away or in Possession of Unauthorized Persons.

(See also Opium and Cocaine.)

(1) *Purpose.* Forbids any person to sell, furnish or give away, except upon prescription of a duly registered and practicing physician, dentist or veterinarian, any cocaine, alpha or beta eucaine, or any of their salts, derivatives, compounds or substances containing same. Regulates prescribing, filing, and filling of prescriptions and forbids prescribing or dispensing to habitual users of those drugs. Provides regulations for wholesale druggists and manufacturers as to labeling with "poison" label, sealing, delivery, recording sales, reporting sales, etc.

(2) *Penalties.* For violation of the law a fine of not more than five hundred dollars and imprisonment for not more than two years, or both or either, at discretion of court. Upon conviction of unauthorized possession, (a misdemeanor) a fine of not more than one hundred dollars, imprisonment for not more than six months, or both or either, at discretion of court.

(Act of July 11, 1917, repeals all acts and parts of acts inconsistent with the law of that date which regulates the possession, etc., of certain drugs and charges Commissioner of Health with responsibility for enforcement).

(3) *Courts Before Which Action is Brought.* County Courts of Quarter Sessions.

* (Digest of Health Laws, page 21.)

* (Digest of Health Laws, page 22.)

(4) *Act of Assembly.* Sections 1, 2, 3, and 4, Act of May 8, 1909, P. L. 487. Sections 1 to 17 inclusive, Act of July 11, 1917, P. L. 758.

(5) *Those Responsible for Enforcement.* State Pharmaceutical Examining Board and its agents. General police authorities. Commissioner of Health for enforcement of Act of 1917.

COMMISSIONER OF HEALTH.*

Powers and Duties; Appointment; Assistants; Vital Statistics; Report; Collection of Expenses; Supervision of Health of State; and Registrars, etc.

(See also Advisory Board; Certified Copies; Housing; Infants; Mattresses; Nurses Registration; Sewage; Sewers; Water Supplies).

(1) *Purpose.* Makes Commissioner of Health head of Department of Health. Prescribes that he be appointed by Governor, with advice and consent of Senate, be a physician of ten years experience and a graduate of a legally constituted medical college; and that his term shall be four years. Provides for discontinuance of State Board of Health. Fixes annual salary of Commissioner at ten thousand dollars with actual necessary expenses. Defines duties as to presiding over Advisory Board Meetings, employment of assistants, experts, purchasing of supplies, materials, issuing of subpoenas, warrants to sheriffs, constables and policemen. Describes duty of Commissioner to protect the health of people of State; authorizes entry, examination, and survey of all grounds, vehicles, buildings and places in State and confers powers and authority of constables on persons authorized by Commissioner. Empowers Commissioner to make orders, concerning nuisances, quarantine regulations, etc., and regulates payment of expenses for abatements. Defines duty of Commissioner to supervise regulation of Vital Statistics and persons reporting same and authorizes apportionment of ten State districts and appointment of ten supervising health officers with prescribed experience, salary, expenses, assistants, etc. Authorizes revocation of orders of local Boards of Health; requires Commissioner to render annual report to Governor; confers powers and duties of State Board of Health upon Commissioner of Health; authorizes him to take charge of health administration in boroughs and first-class townships with collection of expenses, etc. Authorizes Commissioner to designate an employe to approve vouchers for payment and to relieve from duty such person or change appointee; to supervise Bureau of Vital Statistics, appoint a State Registrar and appoint or remove local registrars or sub-registrars.

Act of Assembly. Sections 1 to 14, inclusive, Act of April 27, 1905, P. L. 312. Sections 10, 12 and 13, Act of June 12, 1913, P. L. 471. Sections 1, 2 and 3, Act of April 23, 1909, P. L. 137. Sections 2 and 4, Act of June 7, 1915, P. L. 900. Sections 1 to 3, inclusive, Act of June 4, 1919, P. L. 387.

* (Digest of Health Laws, page 24.)

DEAD BODIES.*

Funerals; Corpses; Disposition of Bodies Regulated.

Carriers, Delivery, Autopsies, Sudden Deaths, Anatomical Board, Unclaimed Bodies, Regulations Relative to, Preparation, Burial Conveyances, Hearse and Time of Burial of Persons Having Died of Certain Diseases.

(1) *Purpose.* Authorizes State Anatomical Board or its agents to take and receive certain bodies, to distribute them among certain schools, colleges, physicians and surgeons proportionately and equitably in manner described; or board of distribution may designate institutions, physicians and surgeons and the number of bodies each shall receive, institutions, physicians and surgeons of county where death occurred to receive preference; each dead body to be held subject to order for twenty-four hours. Describes carrier or container for body and employment of same. Provides for bond from institutions or persons receiving bodies; makes condition that such bodies be used for promotion of medical science within this State. Makes traffic in or transmission or conveyance of such bodies outside of State a misdemeanor. Places expenses of delivery upon those receiving bodies. Directs coroner to investigate the facts of death and make autopsy where cause of death is of suspicious nature; designates places where bodies shall be sent in case of sudden death and distribution of effects. Describes organization and personnel of Anatomical Board and defines its powers concerning unclaimed bodies. Provides for burial at public expense and for payment for same upon warrant, by county treasurer. Directs disinfection of bodies and sealing of caskets in cases of death from certain diseases; limits time of burial and provides for private burial and exclusion from public buildings of such bodies. Limits number of conveyances for such funerals and burials and provides that only hearses or similar conveyances shall be used.

(2) *Penalties.* Upon conviction of traffic in bodies, (a misdemeanor) a fine not exceeding two hundred dollars or imprisonment for a term not exceeding one year.

For neglect, refusal or omission to perform duties enjoined by this Act, on conviction thereof, a fine of not less than one hundred dollars nor more than five hundred dollars for each offense.

For failure, neglect, refusal or violation of provisions relating to disinfection, burial, private funerals, conveyances, etc., by any undertaker, sexton, or other person, upon conviction in a summary proceeding before any magistrate or justice of peace of county where offense was committed, a fine of not less than twenty dollars or more than one hundred dollars, for use of said county; and costs of prosecution or imprisonment in county jail for not less than ten nor more than thirty days or both, at discretion of court.

For failure to deliver body of deceased indigent as required by law persons so failing shall pay to county treasurer expenses incurred; poor directors or county commissioners authorized to bring suit to recover same.

(3) *Courts Before Which Action is Brought.* County Court of Quarter Sessions (for misdemeanor). Magistrate, Alderman or Justice of Peace of county (for other violations).

* (Digest of Health Laws, page 20.)

(4) *Act of Assembly.* Sections 3 to 7, inclusive, Act of June 13, 1883, P. L. 119.

Sections 1 and 2, Act of April 16, 1907, P. L. 92.

Sections 1 and 2, Act of June 13, 1883, as amended by Act of May 14, 1915, P. L. 506.

Sections 19, 20, 21, 22, 23, 24, 26, Act of May 28, 1915, P. L. 617.

Sections 1, 2 and 3, Act of May 24, 1917, P. L. 292.

Sections 20 to 24 inclusive, Act of July 27, 1919, P. L. 1010.

Section 2, Act of May 8, 1919, P. L. 152.

(5) *Those Responsible for Enforcement.* Anatomical Board, coroners, undertakers, sextons, physicians and surgeons, medical teaching institutions, health authorities, county and city authorities and police authorities.

DEPARTMENT OF HEALTH.*

How Composed;

Duties and Enforcement of Regulations.

(See also Housing; Infants; Lead Poisoning; Marriage; Physicians; Quarantine; Schools; Tuberculosis; Water Supplies.)

(1) The Department of Health shall consist of a Commissioner of Health and an Advisory Board. The Department shall promulgate all of its rules and regulations by sending printed copies to all local boards of health, school boards and clerks of councils of cities and boroughs; and by printing, once a week for two weeks in one daily paper of Philadelphia and Pittsburgh; by printing in circular form and giving copies to any one demanding same.

It shall be the duty of the Department of Health to have charge of State system of registration of births, deaths, marriages and disease, preparing necessary methods, forms and blanks for obtaining and preserving records and insuring registration in townships, boroughs, cities and counties and at the Capitol of the State.

(2) *Penalties.* For violation of Department orders and regulations or resisting or interfering with any officer or agent thereof in the performance of his duties (a misdemeanor), a fine of not more than one hundred dollars or imprisonment not more than one month or both, at discretion of court.

(3) *Courts Before Which Action is Brought.* County Courts of Quarter Sessions, Alderman, Magistrate or Justice of Peace.

(4) *Act of Assembly.* Sections 1, 15 and 16, Act of April 27, 1905, P. L. 312. Section 1, Act of June 7, 1915, P. L. 900. Sections 1, 2 and 3, Act of June 4, 1919, P. L. 387.

(5) *Those Responsible for Enforcement.* Commissioner of Health and Advisory Board (for formulating and promulgating rules and regulations). All city, borough, county and township health boards and officers, and all police officers (for prosecution of violators). State Department of Health (for enforcement of registration of births, deaths, marriages and disease).

* (Digest of Health Laws, page 84.)

DISINFECTION (See Dead Bodies; Mattresses; Quarantine).

DOMESTIC ANIMALS.*

Manure, Dogs and Killing of Dogs. Regulation by Boroughs.

(1) *Purpose.* Authorizes borough officers to regulate running at large of domestic animals, horses, cattle, swine, dogs, etc., and to seize and sell same for benefit of borough; also to kill dogs running at large contrary to borough regulations.

Boroughs may make regulations concerning manure, compost in barns, stable yards and other places and may prescribe limits within boroughs, where hogs may be kept or may prohibit the keeping of hogs. (See also Act of July 11, 1917, P. L. 818 in reference to dogs).

Authorizing cities of the third class to prohibit the keeping and slaughtering of horses, cows, calves, swine, sheep, goats, and any other animal or fowl deemed objectionable to the Department of Health.

(2) *Penalties.* As may be fixed by ordinances.

(3) *Courts Before Which Action is Brought.* As may be fixed by ordinances.

(4) *Act of Assembly.* Section 2, Act of April 3, 1851, P. L. 320.

Act of May 14, 1915, P. L. 312.

Act of July 11, 1917, P. L. 818.

Act of July 17, 1919, P. L. 1035.

(5) *Those Responsible for Enforcement.* Borough councils and officers and borough police and health officials.

FALSE PERSONATION.*

(1) *Purpose.* Makes false personation of a detective or any elective or appointive officer of the Commonwealth of Pennsylvania or of any county, municipality, city, borough, township, district or ward, a misdemeanor.

(2) *Penalties.* A fine not exceeding \$500.00 or imprisonment not exceeding two years, both or either, at the discretion of the court.

(3) *Courts Before Which Action is Brought.* County Court of Quarter Sessions, Justice of the Peace, Magistrate or Alderman.

(4) *Acts of Assembly.* Section 1, Act of May 5, 1897, P. L. 39.

(5) *Those Responsible for Enforcement.* Civil police or any State or local health officials having knowledge.

FIREARMS.*

Their Discharge Near Sanatoria and Hospitals Prohibited.

(1) *Purpose.* Prohibits the discharge of firearms and makes it unlawful for any person, at any time, to discharge a firearm of any description, upon the grounds of, connected with or controlled by those operating a public or private hospital or sanatorium, except by written consent of owner or person controlling same or except in defense of person or property; provided such lands are fenced or clearly

* (Digest of Health Laws, page 85.)

* (Digest of Health Laws, page 86.)

marked as to boundaries and posted with notices of the kind and in the manner specified in the law. Provides that no hunting or shooting privileges shall be granted for such properties. Violation of this law is a misdemeanor.

(2) *Penalties.* Fine of twenty-five dollars for first offense or in lieu thereof imprisonment in county jail for one day for each dollar of penalty imposed.

For the second and each succeeding offense the same fine and imprisonment of one day for each dollar of fine, whether penalty be paid in cash or not; all penalties collected to be delivered to county treasurer of county in which conviction is secured.

(3) *Courts Before Which Action is Brought.* County Courts of Quarter Sessions, Magistrate, Alderman or Justice of Peace.

(4) *Act of Assembly.* Sections 1 and 2, Act of June 6, 1913, P. L. 454.

(5) *Those Responsible for Enforcement.* Every policeman, State or local, constable, game protector or other peace officer in Commonwealth is authorized and it is made his duty to arrest persons caught in act of violation without warrant; and to serve warrant, arrest and prosecute for misdemeanor where information of violation is brought to attention of officer.

FOOD.*

Prohibiting the Sale of Unwholesome Meats, Food, Adulterated Food, or Liquor;

Defining Food, Person, and Adulteration of Sausage, Fish and Eggs;

Misbranding of Food; Prosecution;

Cold Storage Food.

Dairy and Food Commissioner to Enforce Rules and Regulations Affecting Food, etc.

(1) *Purpose.* Makes it unlawful for any butcher or other person to expose for sale any tainted meat or fish or veal less than three weeks old when killed in any of cities or boroughs of Commonwealth.

Makes it a misdemeanor to sell or expose for sale flesh of diseased animals or any unwholesome flesh, knowingly, or to sell or expose for sale, unwholesome bread, drink or liquor knowing same to be unwholesome; or to adulterate for purpose of sale, or sell any flour, meal, or other article of food, wine, beer, spirits, or other liquor intended for drinking, knowingly; or any drugs or medicines.

Exempts farmers selling home products from license fees. Makes it unlawful to manufacture, sell, offer or expose for sale or have possession with intent to sell any food which is adulterated or misbranded within meaning of law. Defines terms "food" and "person" and defines "What shall be deemed adulterated;" "What shall be deemed misbranded."

Prescribes method of prosecution by Dairy and Food Commissioner after sampling. Dairy and Food Commissioner charged with enforcement of law of May 13, 1909. Makes it unlawful to sell, offer or expose for sale or have possession with intent to sell at wholesale any unmarked cold storage food and designates the manner of mark-

*(Digest of Health Laws, page 37.)

ing and dating. Fixes time food may be held in cold storage. Regulates cold storage of fish and eggs; and the denaturing of eggs unfit for food.

Makes it unlawful to sell, offer for sale, expose for sale or have in possession with intent to sell adulterated sausage; defines sausage or sausage meat and defines "What shall be deemed adulterated sausage."

(2) *Penalties.* For selling or exposing for sale tainted meat or fish, or under-age veal; ten dollars for each offense, to be recovered before any alderman or justice of peace; one-half to go to informer and other half for the benefit of the poor.

For selling or exposing for sale diseased or unwholesome flesh, bread, drink or liquor, adulterated flour, meal, food, liquors, drugs and medicines,—(a misdemeanor)—a fine not exceeding one hundred dollars or imprisonment not over six months or both or either at discretion of court.

For violation of any provisions of Act of May 13, 1909, P. L. 520, concerning sale, exposure, possession, adulteration, misbranding, etc.—(a misdemeanor)—a fine of not less than one hundred dollars nor more than two hundred dollars or imprisonment of not less than thirty-one days or more than sixty days, or both or either at discretion of the court.

(3) *Courts Before Which Action is Brought.* Any alderman or justice of peace (for violation of Act of 1855). County Court of Quarter Sessions (Acts of 1861 and 1909).

(4) *Acts of Assembly.* Section 1, Act of May 7, 1855, P. L. 463.

Section 69, Act of May 31, 1860, P. L. 382.

Section 1, Act of April 22, 1903, P. L. 258.

Sections 1, 2, 3, 4, 5, 6, 7 and 8, Act of May 13, 1909, P. L. 520.

Sections 15 and 16, Act of May 16, 1913, P. L. 216.

Act of July 7, 1913, P. L. 689.

Sections 1, 2, 3, 4, and 5, Act of March 11, 1909, P. L. 13.

Act of April 11, 1913, P. L. 58.

Sections 1, 2, 3, 4 and 5, Act of April 6, 1911, P. L. 51.

Act of July 10, 1919, P. L. 899.

Sections 1, 2, 3, 4, 5 and 6, Act of July 10, 1919, P. L. 900.

Section 1, Act of July 21, 1919, P. L. 1063.

(5) *Those Responsible for Enforcement.* Dairy and Food Commissioner, State and municipal health officials and police officers.

FUNERALS (See DEAD BODIES).

GARBAGE.*

Refuse, Sewage and Garbage Disposal;

Accumulation Prohibited;

Rules and Regulations for Removal of, by Boroughs and First-Class Townships.

(See also Sewage and Garbage Disposal.)

(1) *Purpose.* Empowers boroughs to provide for collection, destruction, removal and disposal of garbage and other refuse material and provides for payment of same out of funds of borough.

* (Digest of Health Laws, page 44.)

Empowers borough councils to make needful rules and regulations for same and to impose and collect reasonable fees and charges and fines and penalties for violations of such rules and regulations. Empowers boroughs to prohibit accumulations of garbage and rubbish upon private properties within borough limits and to prescribe penalties. Empowers first-class townships to provide for collection and removal of accumulated garbage and ashes by contract and otherwise. Empowers cities of third class to appropriate money and enter into contracts for collection and disposal of garbage, ashes and other waste and refuse matter and to appropriate money, purchase equipment and conduct municipal collection.

(2) *Penalties.* As provided for by ordinances.

(3) *Courts Before Which Action is Brought.* Justice of peace, magistrate, alderman or court of common pleas for collection of fines and penalties.

(4) *Acts of Assembly.* Sections 1 and 2, Act of May 25, 1907, P. L. 230.

Section 1, Act of June 5, 1913, P. L. 434.

Chapter V, Article 1, Section 1, XIII, XIV and XV, Act of May 14, 1915, P. L. 312.

Section 1, Act of June 25, 1913, P. L. 561.

Act of May 31, 1919, P. L. 358.

(5) *Those Responsible for Enforcement.* Borough and township authorities and local health authorities.

HOSPITALS.*

Maintenance of Insane, Feeble-minded and Other Persons

Confined in Institutions of State;

Liability for Support and Collection of Money.

Joint City and County Hospitals.

(See also Boards of Health; Vital Statistics; Water Supplies.)

(1) *Purpose.* Provides that estate or property of any person maintained as inmate of a hospital, home, sanatorium or other institution at the expense, in whole or part, of the Commonwealth, shall be liable for payment of such maintenance.

Also that husband, wife, father, mother, child or children of any inmate of an asylum, hospital, home or other institution maintained in whole or part by the Commonwealth shall be liable, if legally able to do so, to pay for maintenance of such inmate.

Requires every trustee, committee, guardian or person nominated or appointed to take charge of the estate of any lunatic, feeble-minded or other person who is an inmate of any home, asylum or other institution maintained in whole or part by Commonwealth to report within six months of appointment showing amount and character of estate and annually thereafter to report to Attorney General changes in said estate; and requiring every executor or administrator of any such deceased inmate to make such a report within six months of the granting of letters testamentary.

Empowers Court of Common Pleas of county in which said inmate has residence, to make order, upon application of Attorney General, for the payment of maintenance to Commonwealth, upon

* (Digest of Health Laws, page 45.)

trustee, committee, guardian or person, in charge of such inmate's estate; or against father, wife, mother, child or children of person so maintained, in such amount as court deems proper; and to direct the filing with the Attorney General of the statement before mentioned.

Sworn statements of superintendents, stewards or other custodians of records of such institutions shall be received as prima facie evidence of the amount expended by the Commonwealth for maintenance; and such claims shall take precedence over other claims: claims to be paid pro rata, where estate is insufficient to pay claim in full, to State and county in proper legal recoverable proportion.

Provides for erection of joint county municipal hospitals, acquisition of site, preparation of plans, erection of building or use of purchased building; regulates occupancy and provides for rules, regulations, equipment, employment of nurses and physicians and maintenance.

(3) *Courts Before Which Action is Brought.* Court of Common Pleas of proper county.

(4) *Act of Assembly.* Sections 1 to 8, inclusive, Act of June 1, 1915, P. L. 661.

Section 1, Act of July 6, 1917, P. L. 733.

Section 1 to 16, inclusive, Act of May 23, 1919, P. L. 255.

(5) *Those Responsible for Enforcement.* Hospital authorities and Attorney General, trustees, guardians, County Commissioners and corporate authorities of third-class cities.

HOTELS (See Public Eating Places).

HOUSING.*

Organization of Bureau, Powers and Duties.

Municipalities.

(See also Boards of Health and Collateral Laws in Part IV.)

(1) *Purpose.* Creates Bureau of Housing in State Department of Health. Authorizes Commissioner of Health, with consent of Governor, to designate necessary executive and clerical staff, prescribe titles and duties and fix compensation. Places on Bureau duty of investigating sanitary conditions of tenements, lodging and boarding-houses and to condemn same when found to be a menace to those occupying same or employed there; or when found to be overcrowded; notifying owners and agents of conditions and specifying changes or alterations to be made, and time for completing such changes, in writing. Attested duplicate of notification service to be filed in Court of Common Pleas of county in which premises are located; appeal allowed only on direct order of court unless appeal be filed within ten days by owner or agent after service of notice upon him. Describes conditions of appeal and final findings upon review and report of disinterested examiners appointed and hearing by court; court to have right to fix compensation of reviewers. Compensation to be paid by appellant if findings sustain the Bureau. Upon expiration of designated time names of those failing to comply with Bureau's notice or Court's order shall be certified to district attorney for prosecution against such persons. Grants officers or agents of Bureau right of ingress into premises at all times.

* (Digest of Health Laws, page 46.)

Boroughs are empowered to establish by ordinance general regulations for construction of new buildings and repair of old ones, to prevent fire and secure structural and sanitary safety; and to require before work begins, municipal approval of plans, etc.; to provide inspection of construction, repair, appoint building inspectors, prescribe building limits (fire); and to provide penalties for violations of ordinance and building regulations. Declares any building erected or reconstructed contrary to provisions of such ordinance to be a public nuisance and abatable as such.

(2) *Penalties.* (For refusal to comply). Neglect to comply with order of Bureau or with order of Court after appeal and continuing to rent or use premises in violation thereof is made a misdemeanor; a fine of twenty dollars per day for each day it shall have been used and in default of payment commitment to county jail for such period as Court may direct: penalties to apply to officers of corporations or members of firms, either as owners or agents.

(For interference). Any owner, agent or occupant interfering with ingress of officer or agent of Bureau or persons designated by Court shall be deemed guilty of a misdemeanor; on conviction shall be fined not less than fifty dollars nor more than one hundred dollars for each and every offense, or suffer imprisonment of not more than sixty days, either or both at discretion of court.

(3) *Courts Before Which Action is Brought.* Courts of common pleas or court of quarter sessions of proper county.

(4) *Acts of Assembly.* Sections 1 to 6, inclusive, Act of June 24, 1913, P. L. 1015.

Section 1, Act of May 8, 1907, P. L. 184.

Chap. V, Article I, Section 1, XXI, Act of May 14, 1915, P. L. 312.

Sections 1, 2 and 3, Act of June 21, 1919, P. L. 270.

(5) *Those Responsible for Enforcement.* Bureau of Housing, Department of Health, owners, agents, occupants of tenements, lodging and boarding houses, all health officers and police officers.

HYDROPHOBIA OR RABIES.*

Relief for Indigent.

(1) *Purpose.* Imposes upon county officers or directors charged with relief and maintenance of poor and indigent of the county or of any lesser poor districts therein, the duty of providing approved medical care and attendance (including so-called Pasteur treatment where prescribed) to all indigent persons of said districts who may be assumed to be in danger of suffering from hydrophobia or rabies, having been bitten by an animal believed to be rabid. Authorizes payment of expenses so incurred out of funds provided by law.

Repeals all earlier Acts providing for such care out of public funds; Provided, That expenses incurred under earlier Acts, in good faith, shall be approved and paid.

Act of Assembly. Sections 1 and 2, Act of April 22, 1913, P. L. 111.

* (Digest of Health Laws, page 48.)

INDIGENT SICK.*

Third-Class Cities, Boroughs and Counties.

Poor Directors to Furnish Relief;

Relief in Districts Not Having Almshouses and Non-Residents.

(See also Hydrophobia.)

(1) *Purpose.* Directs over-seers, directors or directors of the poor and all other officers having charge or control of the poor in third-class cities to furnish relief to all persons needing same where such officer or authorities are satisfied that such relief is necessary; this authority not to prevent the taking out of orders of relief in cases where proper poor authorities have refused to act.

In counties without poorhouses or almshouse maintained at county expense it shall be the duty of poor directors or over-seers to provide all needy sick and injured indigent persons with necessary support, shelter, medicine, medical attendance, nursing, and, in case of death, burial, whether said person or persons have legal settlement in the poor district or not; if such indigent have no known legal settlement in Pennsylvania such directors or overseers may notify county commissioners where relief is asked or required of the necessity for such relief and after such notice expenses of such relief or burial shall be borne by county; or in their discretion county commissioners may take charge of such indigent person and provide necessary relief or burial at the expense of the county. After due notice to commissioners and their election not to take charge of such indigent person any poor district having assumed or paid expenses incurred for relief or burial of such indigent whose legal settlement is unknown may take action in assumpsit in civil court for amount of expenses incurred. Provided, That nothing in this act be held to change the laws provided in Act of June 13, 1883, regarding charge or control of dead bodies. When a non-resident of city, borough, township or district shall fall sick of any contagious infectious disease before he shall have gained settlement therein, the bureau of health, board of health, or board of school directors of his own city, borough, township or district may be notified by the bureau of health, board of health or board of school directors where he lays sick of the name, circumstance and condition of such sick person; and if upon such notice they neglect or refuse to pay the moneys necessarily expended and to take charge of relieving and maintaining him, or shall on request made refuse or neglect to pay the money expended in maintaining such person it shall be the duty of the Court of Quarter Sessions of the county where sick person was last settled, on complaint to them made, to compel the payment, in the manner directed by law in the case of a judgment obtained against overseers of poor; Provided, That Court of Quarter Sessions of proper county shall have right and authority to supervise, correct, and amend or allow the charges and expenses received, or any items thereof.

Acts of Assembly. Section 1, Act of June 14, 1901, P. L. 561.

Section 1, Act of March 6, 1903, P. L. 18.

Section 1, Act of May 1, 1909, P. L. 307.

Section 2, Act of May 28, 1907, P. L. 285.

Those Responsible for Enforcement. Poor directors and overseers; and State or local health authorities, upon information received.

* (Digest of Health Laws, page 49.)

INFANTS.*

Boarding of.

Ophthalmia, Inflammation of Eyes or Blindness.

Reports Required from Physicians, Midwives and Nurses.

Distribution of Copies of Act of Assembly.

(1) *Purpose.* Makes it misdemeanor for any person other than incorporated institutions to engage in business of receiving, boarding, or keeping infant children under three years of age, for hire or reward, or taking or receiving more than two such infants without legal commitment or obtaining license from the local mayor, justice of peace or magistrate.

Makes it unlawful to engage in said business in third-class cities without license. Authorizes mayors of third-class cities to issue such licenses, as prescribed under general ordinances.

Requires practicing physicians to report ophthalmia neonatorum (inflammation of eyes of infants) in writing to health authorities, local and State, in first class townships, boroughs or cities of all classes and specifies procedure; where no board of health exists report to be made to State Department of Health.

Requires midwives to so report and requires that parents be notified of dangers to infant's eyes by local health authorities or State Health Department immediately. Requires all physicians to report result of treatment to Commissioner of Health. Requires Commissioner of Health to provide copies and requires local health officer to distribute copies of Act of June 5, 1913, to each known midwife or nurse in the city, borough or township.

(2) *Penalties.* Upon conviction of violation of law, to pay fine of not less than twenty dollars or more than one hundred dollars, to be paid to the use of said county and the cost of prosecution, or to be imprisoned in county jail for not less than ten days or more than thirty days or both at discretion of court.

(3) *Courts Before Which Action is Brought.* Summary proceeding before any justice of peace or alderman of county wherein offense was committed.

(4) *Acts of Assembly.* Section 2, Act of May 28, 1885, P. L. 27.

Sections 1 and 2, Act of June 9, 1911, P. L. 854.

Sections 1 to 6, inclusive, Act of June 5, 1913, P. L. 443.

(5) *Those Responsible for Enforcement.* Commissioner of Health (for providing copies of Act). Every Board of Health and health officer in State of Pennsylvania (for distribution of copies of Acts and for prosecution of those who fail to comply).

LEAD POISONING.*

Occupational Diseases;

Health of Employes;

Regulates Manufacturing; Requires Medical Examination and Reports, Sanitary Precautions and Appliances.

(1) *Purpose.* Provides for prevention of occupational diseases, health of employes exposed to lead poisoning, regulation of manufacturing; provides for medical examination and reports and requires sanitary precautions and appliances; makes violation a misdemeanor.

* (Digest of Health Laws, page 50.)

* (Digest of Health Laws, page 52.)

Every physician making examination for lead poisoning, under the Act to prevent occupational diseases, (Act of July 26, 1913, P. L. 1363) shall record such examination, with name and address of person so examined, date, place, directions given and report in duplicate to State Department of Labor and Industry and State Department of Health. Such physician's records to be open to inspection at all times by State Department of Labor and Industry and State Department of Health; report to be on or in conformity with blanks prepared and furnished by State Health Department free to employers. Examining physician also to report examination and finding to employer who shall not continue employee, after five days from such report, in any work or process where he will be exposed to lead dusts, lead fumes or lead solutions, etc.

(2) *Penalty.* Every employer violating or failing to comply with sections of law relating to him and every employee violating or failing to comply with sections of law relating to him shall be guilty of a misdemeanor; on conviction employer shall pay fine of not less than ten dollars nor more than one hundred dollars and employee shall pay a fine of not less than ten dollars nor more than twenty dollars and stand committed until sentence is complied with. Penalties for subsequent convictions in both instances are increased.

Courts Before Which Action is Brought. Magistrate, alderman, justice of peace or court of quarter sessions.

(4) *Acts of Assembly.* Sections 6, 7 and 8, Act of July 26, 1913, P. L. 1363.

(5) *Those Responsible for Enforcement.* Employer (persons, firms, corporations, etc.), (for compliance with provisions).

State Department of Labor and Industry (for prosecution of violations).

State Department of Health (to maintain records, furnish blanks, etc.)

LOCAL REGISTRARS (See Vital Statistics).

MARRIAGE.*

Defining Terms "Husband and Wife."

Defining Bigamy and Limitation of Action.

Marriage of Cousins.

Regulating Issuance of Licenses and Prescribing Form of License.

Prohibiting Issuance of License to Certain Persons.

Regulating Time of Validity of Licenses and Time for Returns of Marriage. Prescribing Duty of Clerk of Orphans Court.

(1) *Purpose.* States how the terms "husband and wife" shall be construed in connection with validity of marriage. Defines bigamy and declares it a misdemeanor. Makes marriage or going through the forms of marriage by unmarried persons and persons already married a misdemeanor. Provides that no indictment under foregoing provisions shall be barred by statute of limitations, if indictment is brought or exhibited within two years.

* (Digest of Health Laws, page 53.)

Makes unlawful the marriage of first cousins and declares such marriage void.

Prescribes form of marriage and what shall be stated in same. Provides that license shall be issued only on written and verified application of clerk of orphan's court; and prescribes facts to be set forth in application, including the fact that neither contracting party is afflicted with a transmissible disease; applications to be uniform throughout Commonwealth and the State Department of Health shall furnish said form and revise it as may be advisable. Prohibits issuance of marriage license to certain persons; limits time of validity of license; designates orphans' court to hear doubtful cases; and requires consent of parents for marriage of those under legal age.

(2) *Penalties.* For bigamy—(a misdemeanor)—a fine not exceeding one thousand dollars, or imprisonment by separate and solitary confinement at hard labor not exceeding two years, or both at discretion of court. The second marriage to be bigamous and void: Provided, That, if after two years absence marriage has taken place upon false rumor, apparently well founded, fine and imprisonment shall not be imposed. For unmarried persons knowingly marrying persons already married—(a misdemeanor)—same penalty except that fine shall not exceed five hundred dollars. All marriages contracted in violation of Section 1, Act of June 24, 1901, are null and void.

(3) *Courts Before Which Action is Brought.* Orphans' court or court of quarter sessions of proper county.

(4) *Acts of Assembly.* Sections 1 to 5, inclusive, Act of July 24, 1913, P. L. 1013.

Sections 1 and 2, Act of March 27, 1903, P. L. 80.

Sections 1 and 2, Act of June 24, 1901, P. L. 597.

Sections 1, 2, 3 and 4, Act of March 27, 1903, P. L. 102.

(5) *Those Responsible for Enforcement.* Justice of the peace, alderman, magistrate or district attorney, upon information furnished to those named, through the State or local health authorities.

MATTRESSES.*

Defining, Regulating Manufacture, Remaking and Sale.

Prohibiting Use of Unsanitary Mattresses.

Prohibiting Misleading Descriptions.

Making Certain Acts Criminal.

Imposing Certain Duties on Commissioner of Health and Chief Factory Inspector.

(1) *Purpose.* Defines mattress as any quilted pad, mattress, mattress pad, bunk quilt, or cushion filled with wool, hair or other soft material, except feathers, to be used as a couch or other bed for sleeping or reclining purposes.

Forbids use or employment of any material previously part of a mattress used for or about a person with infectious or contagious disease without sterilization and disinfection; or any material previously used unless said material has been thoroughly sterilized and disinfected by a reasonable process approved by Commissioner of Health.

* (Digest of Health Laws, page 57.)

Forbids sale, lease, offering or possession with intent to sell, lease, deliver or consign, any material that has been used for or about any person having an infectious or contagious disease, or has been made, remade, or renovated in violation of this law; or any material of which prior use has been made, unless since last used it has been sterilized or disinfected by reasonable process approved by Commissioner of Health. Prescribes descriptive statements concerning the mattresses and materials used. Imposes duty of approval of sterilization and disinfection methods upon the Commissioner of Health of Commonwealth. Imposes duties of inspection enforcement and prosecution on Chief Factory Inspector.

(2) *Penalties.* Violation of provisions of this Act is a misdemeanor, punished by fine of not less than twenty-five dollars and not more than fifty dollars for each offense.

(3) *Courts Before Which Action is Brought.* Magistrate or justice of the peace.

(4) *Acts of Assembly.* Sections 1 to 13, inclusive, Act of May 1, 1913, P. L. 134, as amended by Act of May 14, 1915, P. L. 510.

(5) *Those Responsible for Enforcement.* Justice of peace, alderman, magistrate or district attorney, upon information furnished to them through the State or local health authorities.

MAUSOLEUMS.*

Burial Vaults or Crypts in Second-Class Cities. (See also Burial Grounds.)

(1) *Purpose.* Prescribes conditions of construction and maintenance for public or private interment vaults, crypts or mausoleums in second-class cities. Prohibits building, construction or erection of public or community vault, crypt or mausoleum intended for sale to the public for interment of human bodies where such structures are wholly or partly above the surface of the ground. Charges State Department of Health with supervision of construction of mausoleums, vaults, crypts or structures to hold or contain bodies of the dead. Prescribes method of approval of plans, recording same, inspecting of construction and reports upon same. Provides for final certificate permitting interment and that State shall not be liable. Exempts structures from taxation.

Acts of Assembly. Section 1, Act of June 1, 1915, P. L. 660.

Sections 1 to 7, inclusive, Act of June 23, P. L. 637.

Those Responsible for Enforcement. State Department of Health charged with supervision of construction.

MEDICAL INSPECTION (See Public Eating Places; Schools).

* (Digest of Health Laws, page 57.)

MEDICAL PRACTICE.*

Relating to Right to Practice Medicine and Surgery in Pennsylvania;

Providing a Bureau of Medical Education and Licensure as a Bureau of the Department of Public Instruction;

Providing Means Whereby Right to Practice Medicine and Surgery and Minor Branches May be Obtained;

Providing for Revocation of Licenses Granted by Bureau.

(1) *Purpose.* Makes it unlawful to engage in the practice of medicine and surgery or hold oneself forth as practitioner, or assume title of doctor of medicine or surgery or doctor of a specific disease or to diagnose or treat diseases by use of medicines and surgery, or sign any death certificate or hold oneself forth as able to do so, unless having first fulfilled requirements of this law and having received certificate of licensure by Bureau of Medical Education and Licensure created by this Act.

License to be properly recorded in office of superintendent of Public Instruction. Above provisions not to apply to persons who before date of passage of this law have been accorded right by licensing certificate required by laws of the Commonwealth.

Creates and establishes Bureau of Medical Education and Licensure. Prescribes its composition, appointment, organization and remuneration. Prescribes duties of Bureau as to enforcing law, holding meetings, adopting regulations and printing and publishing rules regarding examination of applicants, registration, etc. Prescribes quorum for various purposes. Prescribes medical supervision, annually, by the Bureau of Medical Educational Institutions, with adjudgment of satisfactory standards conforming to standards stated in the law. Provides for two state examinations per year and prescribes class and rules of examination. Prescribes registration of license, fees for examinations, salaries of members of Bureau, expenses, etc.

Exempts pharmacists, dentists, and osteopaths from provisions of Act as affecting practice of pharmacy, dentistry and osteopathy when authorized by the laws of the State regulating such practice of pharmacy, dentistry and osteopathy. Provides for refusal, revocation or suspension of licenses and cites conviction of crime involving moral turpitude, habitual intemperance in stimulants or narcotics, and conviction for criminal practice as causes. Authorizes Bureau of Medical Education and Licensure at its discretion to grant certificate of practice to a person who served in the Army or Navy of the United States during the war with Germany and Austria and who is a graduate of a medical school recognized by the Bureau, has served as an interne in a hospital for the time required by law but was prevented from taking the Bureau's examination by reason of induction into military or naval service, upon furnishing certain proof to the Bureau of Medical Education and Licensure.

Provides, That applications to Bureau be accompanied by affidavits and that proven false statements shall be deemed perjury and subject to its penalties.

Provides for eligibility, examination subjects, graduation, partial examination and partial examination in case of failure; hospital ex-

* (Digest of Health Laws, page 58.)

perience and laboratory experience; reciprocity at the discretion of the Bureau; exemptions for medical officers of the regular service of United States Army, Navy or Public Health Service, while in discharge of official duties; and regulations for non-resident practitioners.

(2) *Penalties.* On first offense for wilful violation of this Act—(a misdemeanor)—a fine of not more than \$500.00 or imprisonment for not more than six months in county prison, or both, or either, in discretion of court. For second offense, fine limitation is raised to \$1,000.00 and imprisonment limitation is raised to one year.

(3) *Courts Before Which Action is Brought.* Courts of Quarter Sessions.

(4) *Acts of Assembly.* Section 1, Act of June 3, 1911, amended by Act of July 25, 1913, P. L. 1220.

Sections 2 to 13, inclusive, Act of June 3, 1911, P. L. 639.

Sections 1 and 2, Act of May 24, 1917, P. L. 271.

Sections 1 and 2, Act of May 31, 1919, P. L. 358.

(5) *Those Responsible for Enforcement.* Bureau of Medical Education and Licensure. Procedure shall be through either office of the Attorney General of the State or by special attorney or both in the discretion of the Bureau.

MIDWIVES (See Infants; Medical Practice; Vital Statistics).

MILK.*

Regulating Adulteration of Milk;
Sale; Exchange; Exposure for Sale of Adulterated Milk;
Traffic in Milk; Marking of Milk Vehicles;
Percentum of Water Fluid and Milk Solids;
Inspection of Milk; Regulating Weighing, Testing, Buying
and Selling of Milk and Cream;
Providing for Examination and Appointment of Certified Test-
ers and Issuing of Licenses and Making of Tests;
Prescribing use of Standard Testing Glassware.

(1) *Purpose.* Makes it a misdemeanor to knowingly sell, exchange or expose for sale any impure, adulterated or unwholesome milk or to adulterate milk with view to sale or exchange. Provides that in communities having a population of one thousand inhabitants and upwards, persons engaged in sale, exchange or traffic in milk shall have vehicle from which milk is vended conspicuously marked with his name and location from which milk is obtained, etc. Declares addition of water or ice to milk an adulteration. Declares milk obtained from animals feeding on distillery waste or putrefying substances to be impure and unwholesome.

Empowers councils of cities and boroughs to provide inspection of milk under such rules and regulations as will protect the people from adulteration and dilution of the same.

Provides that in cities of the second-class and cities of the third-class sale or exchange of adulterated milk or impure or unwholesome milk shall be punished by fine. Makes it a punishable offense to

* (Digest of Health Laws, page 66.)

offer for sale as pure milk any milk from which cream or any part thereof has been removed or to have in possession with intent to sell, etc., such milk unless the container be marked "skimmed" milk. Declares milk to be adulterated when it contains more than eighty-seven and fifty one hundredths per centum of water fluid or less than twelve and fifty one hundredths per centum of milk solids and less fat than three per centum and fixes the specific gravity limits for sixty degrees Fahrenheit.

Defines when "skimmed" milk shall be deemed adulterated. Defines duty of inspector of milk as to testing, analysis and prosecution.

Makes it unlawful to possess with intent to sell milk which has had butter fat removed therefrom or milk which has had any substance added for the purpose of increasing its consistency or thickness, or milk which contains less than three and one-fourth per centum butter fat and less than twelve per centum of milk solids: Provided, however, That skimmed milk when clean and wholesome may be sold as skimmed milk.

Makes it unlawful to sell or to possess with intent to sell cream mixed with any added condensed or evaporated milk or cream or to which has been added thickening substances, or cream which contains less than eighteen per centum of butter fats: Provided, That it may be sold if vessel or container is plainly labelled stating the fact of mixture with added condensed or evaporated milk or cream and the amount thereof.

Provides that every creamery, shipping station, milk factory, cheese factory, ice-cream factory, milk condensary or person receiving, buying, paying for and selling milk or cream on a basis of or with reference to amount of contained butter fat shall be required to hold permit issued by Secretary of Agriculture, valid for one year and revokable for violation of provisions of this Act. Excepts individuals buying for private use and hotels, restaurants, boarding houses, railroad dining cars, or drug stores. Defines determination of amount of fat in milk and cream and prescribes use of Babcock Test and standard milk testing utensils.

Provides that certified testers only shall make tests and that said testers shall previously undergo examination in milk and cream testing by the Dairy Husbandry Department of Pennsylvania State College and receive certificate. Prescribes certificates fees, licenses to testers and license fees; tests to be made every sixteen days from composite untreated samples; Secretary of Agriculture authorized to make check tests. Prohibits fraudulent weighing. Prescribes enforcement by Secretary of Agriculture and his agents and confers right of entry and examination upon them. Prescribes use of standard Babcock testing glassware and defines same.

Provides that in cities of the first-class milk dealers shall pay annually into the Bureau of Health the sum of \$2.00 which shall entitle said dealer to a license to deal in milk and its fluid derivatives in said city during the then current year. Makes it unlawful for any person or association to use the bottles, jars or containers of another upon which is stamped, blown or engraved the name, title or mark of the owner.

(2) *Penalties.* Adulteration, etc., under Section 1, Act of May 25, 1878—(a misdemeanor)—a fine of not less than \$20.00 for each of-

fense and imprisonment if fine be not paid, for not less than fifteen days or until paid.

For adulteration and neglect to mark milk vehicles, etc., under Sections 2 and 3, Act of 1878, P. L. 144, a fine of not less than \$10.00 for each offense. If fine be not paid imprisonment for not less than eight days or until paid.

For misrepresentation by marking vehicles, a fine of \$50.00 or imprisonment not less than thirty days or both in discretion of the court.

For selling or offering adulterated or unwholesome milk in cities of the second and third-classes a fine of not less than \$20.00 nor more than \$100.00.

For failing to mark skimmed milk as such, same fine.

Recovery of certain fines, under Act of July 7, 1885, P. L. 261, to be for the use of boards of health.

Violation of provisions of Act of June 2, 1915,—(a misdemeanor)—a fine of not less than \$25.00 or imprisonment for not less than thirty days nor more than ninety days, or either, or both, at discretion of court.

If a person accused of violating Section 1, Act of June 2, 1915, shall furnish satisfactory affidavit, etc. Dairy and Food Commissioner shall file said affidavit with record and no prosecution shall be instituted.

For violation of provisions of Acts of May 23, 1919,—(a misdemeanor)—a fine of not more than \$100.00 or imprisonment in county jail for not more than thirty days at discretion of court.

For unlawful use of milk containers of another—(a misdemeanor)—a fine not exceeding \$25.00 or imprisonment not exceeding one month, or both at discretion of court.

(3) *Acts of Assembly.* Sections 1 to 5, inclusive, Act of May 25, 1878, P. L. 144.

Section 1, Act of April 20, 1869, P. L. 81. (See Chap. V, Art. I, Section 1, XXVI, Act of May 14, 1915, P. L. 312.)

Sections 1 to 7, inclusive, Act of July 7, 1885, P. L. 261.

Sections 1, 2 and 4, Act of June 8, 1911, P. L. 712.

Section 3, Act of June 2, 1915, P. L. 735.

Section 1, Act of Apr. 26, 1917, P. L. 103.

Sections 1, 2 and 3, Act of May 17, 1917, P. L. 221.

Sections 1 to 13 inclusive, Act of May 23, 1919, P. L. 275.

Section 1 to 5, inclusive, Supplementary Act of May 23, 1919, P. L. 278.

(4) *Courts Before Which Action is Brought.* Alderman, justice of peace, magistrate or court of quarter sessions of proper county.

(5) *Those Responsible for Enforcement.* Enforcement of Acts of 1919 by Secretary of Agriculture and his agents. Those responsible for enforcement except where specifically stated in the law, are the justice of the peace, alderman, magistrate or district attorney, upon information furnished to them through the State or local health authorities.

NIGHT SOIL.***Not to be Used for Fertilizer for Vegetables Eaten Raw for Human Food.**

(1) *Purpose.* Defines term "night soil" for purposes of this Act. Makes it a misdemeanor to use night soil as fertilizer on ground where vegetables eaten uncooked for human food are grown, unless such night soil be first treated by a process approved by Commissioner of Health to remove its objectionable features.

(2) *Penalties.* Use of night soil in violation of this law punished by fine of not less than \$25.00 or more than \$100.00 for each offense, or imprisonment for not more than two months, or both in discretion of court.

(3) *Courts Before Which Action is Brought.* Alderman, magistrate, justice of peace or county court of quarter sessions.

(4) *Acts of Assembly.* Sections 1, 2 and 3, Act of May 20, 1913, P. L. 240.

(5) *Those Responsible for Enforcement.* Justice of the peace, alderman, magistrate, or district attorney, upon information furnished to them through the State or local health authorities.

NUISANCES.*

**Noxious and Dangerous Trades; Third-Class Cities and Boroughs May Regulate; Public Nuisances; Abatement of and Procedure.
(See also Cities of the Third-Class; Commissioner of Health; Townships of First-Class.)**

(1) *Purpose.* Makes erection of buildings contrary to regulations in townships of first-class a public nuisance and abatable as such.

Authorizes borough councils to regulate noxious or offensive trades or business, manufacture, sale or exposure of fire-works or inflammable articles and limits storage quantities of certain explosives and inflammable articles.

Makes creation or maintenance of a nuisance a misdemeanor and punishable by fine and imprisonment, or either, or both, under circumstances of case. Makes it lawful for court to direct abatement at expense of defendant.

Makes obstructions to private roads, laid out according to law, nuisances. Authorizes councils of third-class cities to empower mayor to petition common pleas courts concerning nuisance property and if nuisance complained of is not a nuisance per se, court may appoint six freeholders to view and report upon property. Powers of viewers described; appeal provided for; abatement by city authorities provided for; defines application of Act.

Defines, as nuisances, on streets and sidewalks, sweepings, ashes, waste, rubbish, garbage, etc.

Concerning alley-ways, lanes or passageways as nuisances with provisions for abatement, vacating, damages, appeal, etc., after view by jury appointed by court.

* (Digest of Health Laws, page 69.)

(2) *Penalties.* For nuisances maintained on streets and sidewalks, fine of \$10.00 for each offense and in default of payment thereof, imprisonment not exceeding ten days. Such other penalties as may be prescribed by local ordinances.

(3) *Courts Before Which Action is Brought.* Alderman, justice of peace, magistrate and court of quarter sessions.

(4) *Acts of Assembly.* Section 1, June 7, 1919, P. L. 424.

Section 2, Act of April 3, 1851, P. L. 320. (See Chapter V, Art. I. Section 1, XVI-XVII, Act of May 14, 1915, P. L. 312.)

Section 73, Act of March 31, 1860, P. L. 382.

Sections 1 to 5, inclusive, Act of June 26, 1895, P. L. 367.

Section 1, Act of April 20, 1905, P. L. 227.

Section 1, Act of June 8, 1907, P. L. 503. (See Chapter VI, Art. V. "b," Act of May 14, 1915, P. L. 312.)

(5) *Those Responsible for Enforcement.* Those responsible for enforcement except where otherwise specifically stated in the law, are the justice of the peace, alderman, and magistrate, upon information furnished to them through the State or local health authorities.

NURSES.*

**Registration, Examination, Salaries of Public School Nurses;
Training School.**

Filing of Counterpart of Certificates With Commissioner of Health.

(1) *Purpose.* Empowers and directs Governor to appoint State Board of Examiners for Nurses; prescribing terms of appointment; filing of vacancies; organization; granting of certificates to nurses; and filing counterpart in office of State Commissioner of Health, to be kept on file there for public inspection.

Transfers former record of nurses registration from Office of Secretary of Commonwealth to Office of Commissioner of Health.

Provides for salaries, expenses and disposition of funds. Prescribes examination of applicants for registration; advertisement of examinations, etc. Provides for registration, without examination, of certain persons applying before June 1, 1912.

Provides for a \$10.00 registration fee; for reports upon nurses training schools; for appointment of State Educational Director of Nurse Training Schools, with salary, mileage, etc.

Authorizes holders of certificates to use of title "registered nurse" and makes unlawful and punishable use of this term or abbreviation R. N. by others.

Provides for revocation of licenses by Board, for sufficient cause.

Prescribes course of study and provides for examination and registration of certain persons as Licensel Attendants and restricts that term and the abbreviation L. A. to use of such persons.

Provides for increase of salaries of public school nurses under certain conditions, (Law of 1919).

(2) *Penalties.* Penalty for unlawful use of term Registered Nurse or abbreviation R. N. or Licensed Attendant or abbreviation L. A. or wilful false representation in application to Board for registration—(a misdemeanor)—a fine of not less than \$50.00 nor more than \$200.00 for each offense and disqualification for five years.

* (Digest of Health Laws, page 73.)

(3) *Courts Before Which Action is Brought.* Alderman, magistrate, justice of peace or county court of quarter sessions.

(4) *Acts of Assembly.* Sections 1 to 11, inclusive, Act of May 1, 1909, P. L. 321.

Section 6, Act of July 10, 1919, P. L. 910.

Sections 1 to 11, inclusive, Act of June 20, 1919, P. L. 545.

(5) *Those Responsible for Enforcement.* State Board of Examiners for registration of nurses. State and local health authorities and others having knowledge to furnish information of violations of provisions of this law.

OPHTHALMIA NEONATORUM (See Infants).

OPIUM AND COCAINE.*

Regulating Possession, Control, Use and Disposition of, etc.
(See also Cocaine and Eucaïne; Poisons; Physicians.)

(1) *Purpose.* Regulates possession, control, dealing-in, giving away, delivery, dispensing, administering, prescribing and use of certain drugs, viz., opium, coca leaves or any compound or derivative thereof or substance or preparation containing any compound or derivative thereof. Defines construction of word "drug," exempting certain quantities by weight or measure and certain liniments, ointments and other preparations. Proviso concerning habitual users and prescriptions by physician or dentist. Defines "person" as to gender and number and defines "prescription." Prohibits ownership, sale, etc., except by certain persons under certain conditions. Prohibits administration of aforesaid drugs with exceptions. Provides for written order for sale and preservation of order for two years. Defines who may obtain drugs; who are habitual users; examination by physician and report to health officer or State Department of Health; prohibits divulging of information received by report; provides for physical examination of persons or animals at time said drugs are prescribed and prohibits veterinarians from prescribing said drugs for use of human beings; provides for keeping of records by physicians, dentists or veterinarians; places burden of proving exemption under this Act upon the defendant. Provides for revocation of license of physicians, dentists, veterinarians, pharmacists or registered nurses when addicted to said drugs; charges State Department of Health with enforcement and with establishment of bureau or division for enforcement; and confers upon Commissioner of Health right to examine all records required to be kept by this Act.

(2) *Penalties.* For divulging information received, a fine not exceeding \$1,000.00 or imprisonment not exceeding one year or both at the discretion of the court.

For violation of other provisions of the Act,—(a misdemeanor)—a fine not exceeding \$2,000.00 or imprisonment not exceeding five years or both at the discretion of the court.

(3) *Courts Before Which Action is Brought.* Alderman, justice of peace, magistrate, court of quarter sessions.

(4) *Act of Assembly.* Sections 1 to 17, inclusive, Act of July 11, 1917, P. L. 758.

(5) *Those Responsible for Enforcement.* State Department of Health and Commissioner of Health through Bureau of Drug Control.

* (Digest of Health Laws, page 76.)

* (Act of Assembly No. 282 of 1917. See p. 2, Pa. Health Bulletin No. 97.)

OPTOMETRY.*

(1) *Purpose.* Defining optometry; and relating to the right to practice optometry in the Commonwealth of Pennsylvania, and making certain exceptions; and providing a Board of Optometrical Education, Examination and Licensure, and means and methods whereby the right to practice optometry may be obtained; and providing for the means to carry out the provisions of this act; and providing for revocation or suspension of licenses given by said board; and providing penalties for violations thereof; and repealing all acts or parts of acts inconsistent therewith.

(2) *Penalties.* For unlawful practice of optometry a fine of not more than \$500.00 or imprisonment for not more than six months, or both or either, at discretion of court for first offense; for second or later offenses a maximum fine increased to \$1,000.00.

(3) *Courts Before Which Action is Brought.* Court of quarter sessions.

(4) *Act of Assembly.* Sections 1 to 15, inclusive, Act of March 30, 1917, P. L. 21.

(5) *Those Responsible for Enforcement.* Board of Optometrical Education, Examination and Licensure.

OSTEOPATHISTS (See Physicians).

PHYSICIANS.*

Reporting of Certain Diseases;
Osteopathic Physicians.

(See also Medical Practice; Cocaine; Dead Bodies; Infants;
Lead Poisoning; Quarantine; Schools; Vital Statistics.)

(1) *Purpose.* Every physician practicing in any part of Pennsylvania shall report in writing to local or State health authorities, certain diseases,—as follows: Actinomycosis, anthrax, bubonic plague, cerebrospinal meningitis (epidemic), (cerebrospinal fever, spotted fever), chicken pox, Asiatic cholera, diphtheria (diphtheritic croup, membranous croup, putrid sore throat), epidemic dysentery (bacillary or amebic dysentery), erysipelas, German measles, glanders, (farcy), rabies (hydrophobia), leprosy, malarial fever, measles, mumps, opthalmia, neonatorum, pneumonia (true), puerperal fever, relapsing fever, scarlet fever (scarlatina, scarlet rash), smallpox (variola, varioloid), tetanus, trachoma, trichiniasis, tuberculosis in any form, typhoid fever, paratyphoid fever, typhus fever, whooping cough, yellow fever, anterior poliomyelitis, impetigo contagiosa, pellagra, scabies, or uncinariasis; and other diseases declared communicable by the State Department of Health in manner prescribed in law,—if he shall treat or examine any person suffering from any of these diseases.

Attending physician and trained nurse may enter placarded premises.

Osteopathic physician shall observe and be subject to all State and municipal regulations relating to contagious diseases, births and

*(Act of Assembly No. 10 of 1917. See Page 17, Pa. Health Bulletin No. 97.)

*(Digest of Health Laws, page 76.)

*(Digest of Health Laws, page 77.)

deaths and all matters pertaining to public health, the same as physicians of other schools.

(2) *Penalties.* For violation of Act of July 17, 1919, for every offense, a fine of not less than \$20.00 or more than \$100.00, for use of county, and costs of prosecution, or imprisonment for not less than ten or more than thirty days, at discretion of court.

(3) *Courts Before Which Action is Brought.* Alderman, magistrate, justice of peace or county court of quarter sessions.

(4) *Acts of Assembly.* Section 1, Act of June 5, 1913, P. L. 443.

Section 12, Act of March 19, 1909, P. L. 46.

Section 1, Act of July 17, 1919, P. L. 1010.

(5) *Those Responsible for Enforcement.* State Health Department to furnish information to courts mentioned above.

PLUMBING (See Boards of Health).

POISONS.*

Definitions; Regulation of Sale;
Registry; Labeling and Exposing.
(See also Cocaine and Opium.)

(1) *Purpose.* Prohibits retail sale by apothecaries, druggists or other persons, of morphia, strychnia, arsenic, prussic acid, or corrosive sublimate, except on prescription of a physician or on personal application of some respectable inhabitant of full age, of the town or place in which such sales shall be made.

Directs legible marking as "Poison" and notation in register kept for that purpose, of the name and residence of purchaser, with quantity and date of sale.

Prohibits exposing in public place or highway of any poison or admixture thereof with intent that same shall be taken by any bird, fowl or wild animal.

Provides that persons selling poisons known to be destructive to adult human life in quantities of five grains or less shall before delivering them enter a record of same in a book of registry to be preserved for two years and open to the inspection of coroner and courts; Proviso of exceptions.

Defines poisons not to be sold without "Poison" label.

(2) *Penalties.* For unlawful sales—(a misdemeanor)—a fine not exceeding \$50.00. For unlawful exposing of poisons, a fine of \$20.00. For non-registry of sale—a (misdemeanor)—a fine not less than \$5.00 nor more than \$50.00 for each offense.

(3) *Courts Before Which Action is Brought.* Alderman, justice of peace or county court of quarter sessions.

(4) *Acts of Assembly.* Section 70, Act of March 31, 1860, P. L. 382.

Sections 1 and 2, Act of May 23, 1878, P. L. 117.

Section 10, Act of May 24, 1887, P. L. 189.

(5) *Those Responsible for Enforcement.* Those responsible for enforcement, except where otherwise specifically stated in the law, are the justice of the peace, alderman, magistrate, etc., upon information furnished to them through the State or local health authorities.

* (Digest of Health Laws, page 78.)

PUBLIC EATING PLACES.*

Inkeepers;

Rules Concerning Public Drinking Cups and Eating Utensils;

Persons Suffering from Certain Diseases Not to be Employed;

Medical Inspection;

Dishes, etc., to be Cleansed;

Towels to be Laundered and Common Drinking Vessels Prohibited.

(1) *Purpose.* Requires every innkeeper to keep good entertainment for man and horse under penalty of \$5.00 for every case of neglect.

Prohibits the employment by persons, firms, corporations or common carriers operating any hotel, restaurant, dining car or any other public eating place in Pennsylvania of any person in the capacity of cook, waiter, chamber maid, kitchen help or other house servant who suffers from trachoma, active tuberculosis of the lungs, open skin tuberculosis, syphilis, gonorrhea, open external cancer, or barber's itch.

Defines manner in which certain employers and operators may comply with provisions of this Act by maintaining medical inspection in the manner and at times prescribed; and states what shall be deemed compliance.

Forbids the keeping in their employ by said employers and operators, persons who are typhoid carriers, after receipt of notice of the fact from physicians or health authorities.

Forbids the furnishing to patrons of any dish, receptacle or utensil used in eating unless thoroughly cleansed since its use by another.

Forbids the furnishing in wash-rooms for public use any towel unless laundered or discarded after each individual use.

Forbids the keeping—in any hotel, restaurant, dining car or other public eating place, or in or about such establishment or any drinking fountain—or public drinking place to which the public, customers or patrons have access—of any common drinking vessel for common use; Proviso relating to cleansing, disinfection or destruction.

(2) *Penalties.* Violation of any provision of the Act of May 28, 1915, punished by fine of not less than \$5.00 nor more than \$100.00 paid to County and the costs of prosecution, or imprisonment for not more than thirty days or both at the discretion of the court.

For neglect to keep good entertainment for man and horse, a fine of \$5.00 for each neglect.

(3) *Courts Before Which Action is Brought.* Summary proceedings before any justice of peace or alderman of county where offense was committed.

(4) *Acts of Assembly.* Section 17, Act of March 11, 1834, P. L. 117.

Sections 1 to 7, inclusive, Act of May 28, 1915, P. L. 642.

(5) *Those Responsible for Enforcement.* Those responsible for enforcement, except where otherwise specifically stated in the law, are the justice of the peace, alderman, magistrate, etc., upon information furnished to them through the State or local health authorities.

* (Digest of Health Laws, page 78.)

QUARANTINE* (COMMUNICABLE DISEASES).

To Safeguard Human Life and Health in Pennsylvania.

By Providing for the Report, Quarantining, and Control of Diseases Declared to be Communicable;

Providing for Indigents Quarantined;

Posting of Placards on Quarantined Places;

Disinfection of Bed-clothing, Houses, Rooms, etc., Exposed to Infection.

Exclusion from Certain Places; Vehicles; Burial Preparations; Removals, etc.

(See also Cities of the Third-Class; Commissioner of Health; Physicians.)

(1) *Purpose.* Enumerates communicable diseases; empowers Department of Health to declare others communicable; specifies method of such declaration and promulgation of same.

Defines duty of practicing physician in reporting diseases declared communicable and reportable; specifies methods of reporting same to health authorities, State and local.

Defines duties of health officers in connection with receiving reports, quarantining premises and posting placards of notification of warning. Specifies wording of certain placards for certain diseases; authorizes employment of guards over quarantined premises.

Regulates quarantine periods for special diseases, with Provisos.

Regulates the exclusion of persons having certain communicable diseases from certain places and defines duties of teachers or school officers in connection therewith.

Excludes persons with scarlet fever from certain places and specifies duties of teachers and school officers and the period of exclusion, and its continuance for ten days following removal of quarantine.

Excludes residents of premises where certain communicable diseases exist, from certain places and specifies the duties of teachers and school officers in connection therewith.

Permits removal of certain residents from premises where certain communicable diseases exist, after prescribed personal disinfection under defined circumstances; and permits attendance at school in connection with diphtheria immunity, scarlet fever immunity, etc., Provisos.

Prescribes conditions of removal of residents from premises where relapsing fever exists; with conditions of admission to schools, etc.

Authorizes State Department of Health to make general regulations and to determine conditions under which certain persons may take up residence upon other premises and may attend school, where diseases declared communicable and quarantinable exist in their places of residence.

Makes it the duty of teachers, principals and superintendents in charge of schools, either public, private, parochial, Sunday or other kinds, to exclude pupils having certain described symptoms; and prescribes condition of readmission upon signed certificate of person designated for the purpose.

Requires registry, upon a register open for inspection, of such persons excluded from school or readmitted.

* (Act of Assembly No. 400. See page 17, Pa. Health Bulletin No. 108.)

Provides that blanks for reports and certificates be furnished by local authorities and State Department of Health.

Makes it duty of local health authorities, or State Department of Health, if no such local health authorities exist, to furnish daily, by mail or otherwise, to school officials, a printed or written bulletin giving name, location and disease of all persons suffering from certain diseases, upon receipt of reports of such cases of disease from practicing physicians, as provided for in this law. (Act No. 400 of 1919, P. L. 1010).

Directs disinfection or destruction of premises upon removal or discharge of certain persons with specified diseases, in the manner authorized and required by the health authorities.

Directs exclusion from hired vehicles and public conveyances of persons with certain specified diseases, without previously secured consent of health authorities; notification of owner or driver of vehicle and provision for immediate disinfection of conveyance.

Prohibits the exposing, etc., of infected personal property; with Provisos.

Prohibits the letting of any part of premises where certain diseases have existed without disinfection of premises; defines admission of certain guests to certain places as the letting of part of the premises.

Empowers health authorities of the several townships, boroughs and cities of Pennsylvania to establish additional rules and regulations regarding isolation and quarantining in connection with diseases enumerated, and to regulate destruction of infected articles, disinfection or fumigation; and the carrying out of the provisions of the Act (No. 400-1919), as public safety and health demand; but forbidding the abridgment in any way of this Act (No. 400-1919), or the regulations of the State Department of Health.

Defines burial preparations, duties of undertakers, conditions of interment, funeral services, exclusion of certain corpses from public buildings, regulates conveyances at funerals, etc., in the case of certain specified diseases.

Places responsibility for violations of this Section of the Act (No. 400-1919).

Directs and defines the weekly reports of local health authorities concerning communicable diseases.

Makes punishable the interfering by persons, with health officers or other duly qualified agents of State or local health departments in the discharge of their duties, relating to placarding, quarantining, disinfecting, releasing from quarantine, or the investigation of alleged quarantinable diseases.

Makes punishable the neglect or refusal to comply with the provisions of this Act (No. 400-1919) by any physician, undertaker, teacher, principal, superintendent, sexton, janitor, parent or guardian.

Repeals all Acts or parts of Acts inconsistent with the Act of July 17, 1919 (Act No. 400), P. L. 1010.

(2) *Penalties.* For tampering with placards: Fine not less than \$10.00 (for every offense) or more than \$100.00, for use of county, with costs of prosecution, or imprisonment for not less than ten days or more than thirty days, or both at the discretion of the court.

For unlawful entry of quarantined premises, violation of quarantine or interference with health officer (for every offense): Same penalty except that the minimum fine shall be \$50.00.

For violation of provisions of Act No. 400, 1919, by physicians, undertakers, teachers, sextons, janitors, parents or guardians (for every offense): Same penalty except that minimum fine shall be \$20.00 .

(3) *Courts Before Which Action is Brought.* Alderman, justice of peace, magistrate and court of quarter sessions.

(4) *Acts of Assembly.* Act of July 17, 1919, P. L. 1010.

(5) *Those Responsible for Enforcement.* Local or State Health authorities to furnish information to courts mentioned above.

RESTAURANTS (See Public Eating Houses).

SANATORIA (See Firearms; Hospitals; Tuberculosis).

SCHOOLS.*

Necessary Grounds and Buildings;
Ventilation;
Sanitary and Medical Inspection;
School Nurses and Medical Inspectors.
(See also Quarantine; Vaccination.)

(1) *Purpose.* Provides that school directors of each district shall provide grounds and buildings to accommodate all children between the ages of six and twenty-one years. Such buildings shall be equipped and maintained in a proper manner, properly heated, ventilated and sanitary. Provides that total light area for school room shall equal twenty per cent. of floor space; that said room shall have not less than fifteen square feet of floor space and not less than two hundred cubic feet of air space per pupil. That common heating stoves in school rooms must be protected with iron or suitable shield to protect pupils at their desks from direct heat rays. That school rooms must be properly ventilated and furnished with thermometer. That all doors to recitation rooms and outside doors must open outwards. That school buildings of certain construction be furnished with fire-escapes and scholars trained in fire drills. That grounds be sanitary and so maintained with suitable number of shade trees. Provides for a suitable number of water-closets, not less than two for each building, properly screened and partitioned for use of both sexes, said closets to be clean and sanitary.

That for every school district of the first, second, third and fourth classes the State Department of Health shall provide at State cost medical inspection for all pupils in public schools. That said medical inspectors shall be legally qualified physicians of at least two years experience; that at least once a year said medical inspectors shall examine and test all pupils in public schools, giving special attention to defective sight, hearing, teeth or other disabilities specified by the Commissioner of Health and report said defectives to principal, teacher, or one designated by school board to receive said report. That no person having tuberculosis of the lungs, be he a pupil, teacher, janitor or other employee in any public school, except a special school authorized by the Commissioner of Health, shall be connected with such school. That no teacher's certificate shall be granted to any one who has not been examined by a legally qualified physician.

* (Digest of Health Laws, page 91.)

Such physician shall state that such applicant is not mentally or physically disqualified by reason of tuberculosis or any other chronic or acute defect, is of good moral character and is not in the habit of using opium, intoxicating liquors or other narcotic drugs. Medical inspectors of school districts shall examine and report result to school directors of such examination of children between the ages of eight and sixteen years who have been reported to him and who are blind, deaf, or mentally deficient, and whether or not they are fit for education and training. At least once a year a sanitary inspection shall be made by local medical inspectors of all privies, water-closets, urinals, water-supply, drinking vessels and utensils and they shall see that the laws, regulations and requirements of health for public schools are carried out. Any board of school directors may employ one or more school nurses who are graduate nurses and shall define their duties.

Provides for schools, food, clothing and transportation for tubercular children under certain circumstances.

(4) *Acts of Assembly.* Act of May 18, 1911, P. L. 309.

Act of May 27, 1919, P. L. 298.

Act of June 5, 1919, P. L. 399.

Act of June 23, 1919, P. L. 572.

Act of July 17, 1919, P. L. 1010.

Act of July 22, 1919, P. L. 1090.

Act of June 20, 1919, P. L. 511.

Act of May 27, 1919, P. L. 309.

(5) *Those Responsible for Enforcement.* State and local health and school authorities.

SEWAGE.*

Not Permitted to be Discharged Into Public Streams;

Permits;

Reports Relative to Sewage to be Filed With Commissioner of Health; Penalties, etc.

(1) *Purpose.* Provides that no persons, corporation or municipality shall permit any sewage to flow into any waters of the State. Exceptions: water pumped or flowing from coal mines, tanneries or sewage systems in operation at time this Act was passed. Defines sewage. Provides for applications for permits for sewer systems being made to the Governor, Attorney General and Commissioner of Health upon whose unanimous opinion a permit will be granted to discharge sewage into State streams. Commissioner of Health may prescribe the conditions under which permit will be granted and may revoke, modify or change said permit upon notice. Municipalities existing at the time of the passage of this Act must file report, with such information as required, to the Commissioner of Health. All individuals, private corporations and companies discharging sewage into waters of the State at the time of passage of this Act may continue to do so unless Commissioner of Health considers such discharge injurious to public health, when he may order such discharge discontinued within ten days. Appeals from any of the orders or decisions under this Act of the Commissioner of Health, Governor and

* (Digest of Health Laws, page 95.)

Attorney General may be taken by those in interest to the Court of Common Pleas, who may affirm, modify or otherwise fix terms upon which permission shall be granted.

(2) *Penalties.* For discharge of sewage into waters of the State without a permit, where permit is required, a fine of \$500.00 and a further penalty of \$50.00 per day for each day offense is maintained.

For failing to file a report where such report is required, fine shall be \$50.00.

For failure to obey orders of the Commissioner of Health referred to in this Act, a fine of \$25.00 and a further fine of \$5.00 per day for each day the offense is committed.

(3) *Courts Before Which Action is Brought.* Court of common pleas.

(4) *Acts of Assembly.* Sections 4 to 11, inclusive, Act of April 22, 1905, P. L. 260.

Chap. VI, Art. I and II, Act of May 14, 1915, P. L. 312.

(5) *Those Responsible for Enforcement.* Commissioner of Health, Attorney General and Governor.

SEWAGE AND GARBAGE DISPOSAL.*

Procedure by Borough for Obtaining Garbage and Sewage Disposal Plants.

(See also Garbage.)

(1) *Purpose.* Authorizes boroughs to purchase land for purpose of erecting and maintaining garbage and sewage disposal plants. Where borough and owner or owners of land cannot agree as to amount of damages to be paid for taking land necessary for disposal plant, the borough may give bond for said damages. Authorizes court to appoint viewers for the assessing of damages; provides for hearings before said viewers, their fees and appeal to the court from decision of said viewers. The court of common pleas shall approve location of said garbage or incinerating plant. Boroughs may supply sewage service to municipalities and persons outside of borough limits, granting the right of eminent domain for such purpose and prescribing procedure thereunder.

Township Code of 1917 confers similar authority upon Commissioners of first class townships.

Courts Before Which Action is Brought. Court of common pleas to approve, etc.

Acts of Assembly. Sections 1 to 8, inclusive, Act of April 1, 1909, P. L. 79.

Chap. VI, Articles I and II, Act of May 14, 1915, P. L. 312.

Sections 1, 2 and 3, Act of June 7, 1919, P. L. 426.

Chap. XIV, Article I, Section 1072, Act of July 14, 1917, P. L. 840.

Those Responsible for Enforcement. Commissioner of Health for approval of plans and specifications.

* (Digest of Health Laws, page 98.)

SEWERS.*

Regulation and Connection;
 Mains and Extension of Same;
 Who May Establish and Construct.
 Assessments, Rentals and Collections;
 Fees and Plans; Damages; Procedure to Procure the Use of.
 (See also Cities of the Third-Class.)

(1) *Purpose.* Provides that boroughs may construct a system of public sewers and regulate same. Boroughs may also extend same beyond borough limits to place where sewage is to be disposed of and may also purchase from a private corporation a sewer system already built and maintained in a borough by said private corporation.

Townships of the first-class are authorized to build and maintain sewer systems and where impracticable to carry mains along public roads may construct same through private lands; they are also authorized to dispose of said sewage or connect with sewer or sewers of adjacent municipality for disposal.

Municipalities may unite in the construction of sewers, upon having plans and specifications approved by the State Department of Health.

Councils of cities of the third-class may construct sewers; prescribes the procedure for construction, the method of assessments and the appointment of viewers for assessing damages, etc.

The filing of liens for unpaid assessments and the collection of annual rental for use of sewers. Provides that unpaid sewer rentals may become a lien on properties charged and annual rentals shall not exceed annual expenses.

Provides for the construction and maintenance by counties of trunk sewers and disposal plants; the establishing of sewer districts and provides that surveys and plans shall be submitted to State Department of Health.

Provides for entry on property for the making of surveys and agreements as to damages. Prescribes method for the appointment of viewers, for the assessing of damages and hearing exceptions to report of viewers. Exceptions may be filed by any persons in interest within thirty days after the filing of said report.

Authorizes counties to advertise for bids to construct sewer systems and provides for plans, estimates and proposals for maintenance, and how annual tax is to be levied. Lateral sewers may connect with trunk line. Cities, boroughs and townships may connect with said county sewerage system free of charge. The cost and operation of said county sewerage system is to be borne by district using system and provides for the use and repair of said system.

(3) *Court Before Which Action is Brought.* Court of common pleas for approval.

(4) *Acts of Assembly.* Sections 1 and 5, Act of May 15, 1889, P. L. 220.

Section 7, Act of April 28, 1899, P. L. 104.

Section 1, Act of April 19, 1901, P. L. 82.

Section 1, Act of May 24, 1901, P. L. 294.

Section 1, Act of July 17, 1901, P. L. 668.

* (Digest of Health Laws, page 100.)

- Section 1, Act of April 23, 1907, P. L. 97.
 Chap. VI, Art. XII, Sections 10 and 11, Act of May 14, 1909, P. L. 312.
 Sections 1 and 2, Act of June 15, 1911, P. L. 966.
 Art. XIII, Sections 1, 2, 3, 4, June 27, 1913, P. L. 568.
 Chap. VI, Arts. XII and XIII, Sections 3, 4, 5, 13, 14, 16, Act of May 14, 1915, P. L. 312.
 Sections 1 to 3, inclusive, May 11, 1915, P. L. 284.
 Sections 1 to 21, inclusive, Act of June 5, 1915, P. L. 852.
 Sections 1, 2, 3, Act of June 7, 1919, P. L. 426.
 (5) *Those responsible for Enforcement.* Borough Councils, Commissioners of first-class townships, County Commissioner and councils of third-class cities. Courts of Common Pleas and County Courts of Quarter Sessions.

SPITTING.*

Receptacles to be Cleansed;

Penalties for Unlawful Spitting and Failure to Post Signs.

(1) *Purpose.* Makes it unlawful for any person to spit on sidewalk, wharf or landing; floor, platform, stairway, elevator or covering used thereon; or railroad or railroad station, floor, platform or steps of any railroad or railway car; or other vehicle, conveyance or common carrier used for the transportation of the public. Conspicuous notices placed in prominent places shall be posted by owners of buildings, cars, vehicles, conveyances or common carriers used for transportation of public. Spitting receptacles provided for public shall be cleansed and disinfected daily.

(2) *Penalties.* For unlawful spitting, a fine of \$100 and costs to be paid into treasury of locality in which offender is tried. In default of payment of fine, imprisonment not less than one day nor more than five days in county jail. For failure to post signs, a fine of not less than \$5.00 nor more than \$5.00.

(3) *Courts Before Which Action is Brought.* Justice of peace, alderman or magistrate.

(4) *Acts of Assembly.* Sections 1 to 5, inclusive, Act of May 11, 1909, P. L. 516.

(5) *Those Responsible for Enforcement.* State or local health authorities, police, constables or other persons authorized to make arrests.

STATE BOARD OF HEALTH.*

Duties;

The Enforcement of Quarantine Regulations;

Examination of Water Supply;

The Abatement of Pollutions, etc.

(1) *Purpose.* Provides that Commissioner of Health shall have general supervision of health and lives of citizens of this Common-

*(Digest of Health Laws, page 112.)

*(Digest of Health Laws, page 113.)

(Note:—Powers and duties formerly imposed by law on the State Board of Health were conferred upon Commissioner of Health in 1905).

wealth. He shall make sanitary investigations concerning causes of diseases; epidemic diseases; sources, mortality and the effects of localities; employments; conditions; habits; etc.; on the health of the people. He shall codify and suggest amendments to sanitary laws and shall have power to enforce same. He shall have power to abate nuisances and enforce quarantine regulations where no local board of health exists or board is inoperative. He may require reports from public dispensaries, hospitals, asylums, prisons, schools, etc. He is authorized to examine water supplied to cities of the first-class in the Commonwealth for domestic uses; investigate causes of contamination of water supplies and adopt means for abatement of same. He is authorized to notify persons or corporations on whose property said contamination exists and act where there is no local board of health or where local board refuses or neglects to act. Expenses of such abatement of nuisances shall be borne by owner or owners of property on which said nuisance exists. If contamination is incident to some legitimate business the abatement may be by petition to court of common pleas.

(2) *Penalties.* \$100.00 fine for failure to abate nuisance.

(3) *Courts Before Which Action is Brought.* Court of Common Pleas and County Court of Quarter Sessions.

(4) *Acts of Assembly.* Sections 5, 6 and 8, of Act of June 3, 1885, P. L. 56.

Sections 1, 2, 3 and 4, Act of May 2, 1899 P. L. 176.

(5) *Those Responsible for Enforcement.* Local and State health authorities.

SUMMARY CONVICTIONS.*

Procedure;

Appeals and Recovery for Penalties.

(See Quarantine; Spitting; Public Eating Places.)

Purpose. Provides that in all summary convictions before a magistrate or court not of record, the defendant within five days after such conviction, may appeal to the court of quarter sessions in county where magistrate resides or court not of record shall be held, upon entering a recognizance with one or more sureties. In suits for penalties an appeal may be taken to the court of common pleas upon allowance of said court upon cause shown.

Acts of Assembly. Section 1, Act of April 22, 1905, P. L. 284.

TOILET ROOMS.*

In Certain Foundries, Rolling, Boiling, Heating and Finishing Mills;

Cities and Boroughs.

Public Comfort Stations and Drinking Fountains.

(1) *Purpose.* Prescribes that every person, firm or corporation operating a foundry for casting of iron, steel, brass or other metal, rolling, boiling, heating and finishing mills, wherein ten or more men are employed, shall establish and maintain a convenient toilet room

* (Digest of Health Laws, page 115.)

* (Digest of Health Laws, page 116.)

with wash bowls and running hot and cold water, wherein the employes may change their clothes and wash. Said toilet-room and a separate suitable water closet shall be connected with the foundry building and be properly heated, cleaned and ventilated.

Authorizes boroughs and cities to construct and maintain along highways, within corporate limits, comfort and waiting stations and drinking fountains for convenience of public. Damages accruing to abutting properties on account of aforesaid improvements shall be ascertained and collected in manner now provided by law.

(2) *Penalties.* Provides \$100.00 fine for failure to comply with toilet clause in foundries, etc.

(3) *Courts Before Which Action is Brought.* Magistrate, alderman or justice of the peace.

(4) *Acts of Assembly.* Sections 1 to 4, inclusive, Act of June 7, 1911, P. L. 673.

Sections 1 and 2, Act of June 27, 1913, P. L. 632.

Section 6, Chap. V, Art. I, Act of May 14, 1915, P. L. 312.

Sections 1 and 2, Act of May 27, 1919, P. L. 387.

(5) *Those Responsible for Enforcement.* Local and State health authorities or any person upon information received.

TOWNSHIPS OF THE FIRST CLASS.*

Abatement of Nuisances;

Regulation of Animals Running at Large.

(See also Boards of Health; Burial Grounds; Commissioner of Health; Garbage; Sewers; Water Supplies.)

(1) *Purpose.* Authorizes the making of regulations respecting pig-pens, slaughter houses, manure pits, drains, cesspools and manufactories that are offensive, to abate nuisances prejudicial to public health and public safety and to collect the cost of such abatement from any person who may be responsible for having created the nuisance. Also to prohibit or regulate the running at large of animals.

(2) *Penalties.* Such as may be prescribed by ordinance.

(3) *Courts Before Which Action is Brought.* Alderman, justice of peace or magistrate.

(4) *Acts of Assembly.* Section 7, April 28, 1899, P. L. 104.

Section 1, Act of June 12, 1913, P. L. 471.

Chap. VII, Art. I, Section 11, Act of July 14, 1917, P. L. 840.

(5) *Those Responsible for Enforcement.* Local and State health authorities.

TUBERCULOSIS.*

Sanatoria;

Forestry Reservations;

Appropriations, etc.

(See also Quarantine; Schools.)

(1) *Purpose.* Authorizes the Department of Health to establish one or more sanatoria for treatment of indigent persons affected with tuberculosis. Forestry reservations may be used for the above purposes.

* (Digest of Health Laws, page 117.)

* (Digest of Health Laws, page 118.)

County Commissioners are authorized to appropriate funds necessary for indigent residents in county who may be inmates of such sanatorium and under treatment for tuberculosis. The appropriation shall not exceed \$10.00 per patient per week. County Commissioners shall have free access to sanatoria for inspections, etc.

Provides for appropriations for maintenance, support, acquiring property, constructing and equipping said sanatoria and dispensaries for free treatment of indigent tubercular patients.

(4) *Acts of Assembly.* Sections 1 and 2, Act of May 14, 1907, P. L. 197.

Sections 1, 2 and 3, Act of June 1, 1911, P. L. 623.

Sections 1, 2 and 3, Act of April 28, 1915, P. L. 193.

Appropriation Acts of 1907-1909-1911-1913-1915-1917-1919.

UNDERTAKERS (See Dead Bodies; Vital Statistics).

VACCINATION* (See Schools; Medical Inspection).

(1) *Purpose.* All principals and others in charge of public, private, parochial or other schools are required to refuse admission to any child not presenting certificate of successful vaccination signed by a physician. Department of Health to regulate vaccination and examination and form of certificates.

(2) *Penalties.* A fine of not less than \$5.00 nor more than \$100.00; in default of payment, such person convicted shall undergo imprisonment in county jail for a period not exceeding sixty days.

(3) *Courts Before Which Action is Brought.* Mayor, burgess, alderman, police, magistrate or justice of peace.

(4) *Act of Assembly.* Sections 12 and 21, Act of June 18, 1895, P. L. 203 and 207.

(5) *Those Responsible for Enforcement.* Principal or other person in charge of schools, police, constable, local and State health authorities.

VITAL STATISTICS.*

Bureau of Vital Statistics;

Registration Districts;

Burial Permits;

Certificates of Death;

Burials;

Certificates of Birth and Birth Registration.

(See also Commissioner of Health; Department of Health.)

(1) *Purpose.* All statistics of births, marriages, deaths, and diseases; of practitioners of medicine and surgery; mid-wives, nurses, undertakers, and all persons deemed to be of importance in completing registration of births, deaths, etc., shall be compiled and preserved by the Central Bureau of Vital Statistics under the supervision of the Commissioner of Health. Each city, borough and township shall constitute a primary registration district. No body of any person whose death occurs in the State shall be interred, cremated, etc., until a

* (Digest of Health Laws, page 120.)

* (Digest of Health Laws, page 121.)

burial permit has first been procured from a local registrar; prescribing method for local registrar to issue permit when dead body is transferred from one district to another or from outside the State. Stillborn children shall be registered as births and deaths by registrar. Midwives shall not sign certificates of death. Prescribing the certificate of death and what it shall contain and how authenticated by signature and the disposition of the body by the undertaker. The medical certificate of physician and contents thereof to be made by physician. Prescribes method of reporting deaths where no physician was in attendance and prescribes duties of registrar and local health officer in such cases. The undertaker shall be responsible for obtaining certificate of death prior to obtaining burial permit. Burial permit will be handed to sexton or person in charge of burial plot who shall make a return signed by him to the registrar. No body is to be interred unless accompanied by a permit. All births that occur in the State shall be registered in the districts in which they occur. Physicians and midwives are required to file certificate of birth, when in attendance, within ten days after such birth, otherwise registrar to secure necessary information. Form of certificate prescribed. Special blanks for given names, etc. Physicians, midwives and undertakers must register with local registrar and return thereof made by him to the State Registrar. Hospitals, asylums or other institutions, public or private, to which persons report for treatment of disease, confinement, etc., are required to make complete record of inmates for statistical purposes on form provided by State Registrar. Prescribes the duties of State and local registrars and fees of local registrars and how paid, also fees, etc., for certified copies of records. Local registrars empowered to administer oaths or affirmations of undertakers, relating to preparation of bodies without payment of fees.

(2) *Penalties.* For failure of responsible physician to neglect or refuse to make out death certificate, not less than \$5.00 fine nor more than \$50.00.

For failure to report births, not less than \$5.00 nor more than \$50.00.

For failure to obtain burial permit, not less than \$25.00 nor more than \$100.00.

For failure of registrar, deputy or subregistrar, to enforce the provisions of this Act and perform his duties, a fine of not less than \$10.00 nor more than \$100.00.

For altering certificate of birth or death, a fine of not less than \$10.00 nor more than \$100.00 or imprisonment not exceeding sixty days or either or both in discretion of court.

For furnishing false information to physician, undertaker, or midwife or making incorrect certification of births or deaths, a fine of not less than \$5.00 nor more than \$100.00.

For transportation company or common carrier transporting or carrying or accepting for carriage the body of a deceased person without accompanying permit, a fine of not less than \$50.00 nor more than \$200.00.

(3) *Courts Before Which Action is Brought.* Magistrate, alderman, justice of peace and County Court of Quarter Sessions.

(4) *Acts of Assembly.* Section 1, Act of May 7, 1907, P. L. 173. Sections 1 and 2, Act of July 16, 1913, P. L. 750.

Sections 3, 5, 6, 8, to 24, inclusive, Act of June 7, 1915, P. L. 900.

(5) *Those Responsible for Enforcement.* Local and State health authorities.

WATER SUPPLIES.*

Sedimentation;

Plans and Surveys of Waterworks and Permits for Same and Appeals;

Pollution of Water Used for Drinking Purposes.

(See also Burial Grounds.)

(1) *Purpose.* Sediment from certain industrial wastes to be caught in tanks for that purpose; not to be drained into reservoirs, lakes, ponds or streams of the Commonwealth.

Makes it unlawful for any person to wilfully enter upon inclosed land of any company or corporation intended for the purpose of supplying water to the public for drinking purposes, on which land is erected any dam, reservoir, pond or other artificial means for storing water and to pollute or attempt to pollute the water on such land.

Plans and Surveys for Waterworks. Boroughs may provide a supply of water for the public within such borough and operate waterworks or contract for such supply. Boroughs have the power to construct waterworks and appropriate springs, streams, reservoirs, creeks and lands for that purpose but riparian owners along streams and waters so used are not to be deprived of the free use and enjoyment of same. The Commissioner of Health to issue permits to boroughs for the erection of waterworks upon application. Boroughs may supply water outside borough limits at rates not less than those required to be paid by persons and corporations within the limits of such borough. They may also appoint waterworks commissions which may promulgate bylaws and regulations not inconsistent with the laws of the Commonwealth, rules and regulations of the Department of Health or Water Supply Commission.

Cities may patrol the drainage area of streams from which water is supplied to the city. Hospitals supported in whole or in part by the Commonwealth may erect reservoirs and furnish water for said hospitals upon permit from the Department of Health and Water Supply Commission of Pennsylvania. Cities of the third-class, boroughs and first-class townships may also supply water outside of their limits and establish pipe lines for that purpose but they cannot supply territory supplied by a private corporation.

Townships of the first-class may contract for water supply and delivery into lines of the township at or near the boundaries thereof. A township making such contract may by ordinance provide and erect and protect a system of distribution of the water. Plans and surveys for such system must be submitted to the Department of Health and a permit for the construction of same must first be had from the Commissioner of Health.

Townships may occupy highways and take private property for the purpose of water supply with certain exceptions. Compensation for such damages covered by a bond approved by the court at the time land is taken. Viewers to assess damages accruing from such taking, injury or destruction, may be appointed by the court. Prescribe procedure.

Obligations for construction or acquisition of water works may not be considered a debt of the municipality, within the meaning of the

* (Digest of Health Laws, page 131.)

Act of Assembly authorizing, limiting or increasing debt or indebtedness under certain conditions set forth in the Act. Tax not to be levied upon the construction of waterworks, etc., until works have been operated for one year. Any of the said municipalities may incur indebtedness in excess of seven per cent. and not exceeding ten per cent. of the assessed valuation if said increased indebtedness shall have been assented to by three-fifths of the electors.

Any municipality in the Commonwealth of Pennsylvania may lease water supply works and systems from a private individual, co-partnership, association or corporation and operate same and establish rates.

(2) *Penalties.* (Penalty for violating sedimentation clause); Fifty dollars fine for each offense in addition to liability for all damages done to any individual, owner or lessee on such waters.

(Penalty for pollution clause); Fifty dollars fine and imprisonment not exceeding sixty days.

(3) *Courts Before Which Action is Brought.* Alderman, justice of peace or magistrate. (Sedimentation clause.)

County Court of Quarter Sessions (pollution clause.)

(4) *Acts of Assembly.* Section 1, Act of May, 1876, P. L. 146.

Section 1, Act of June 24, 1895, P. L. 231.

Sections 2, 3, and 11, Act of April 22, 1905, P. L. 260.

Act of May 2, 1905, P. L. 350.

Section 1, Act of June 6, 1907, P. L. 417.

Sections 1 and 2, Act of June 1, 1911, P. L. 541.

Section 1, Act of June 13, 1913, P. L. 507.

Sections 2, 3, 4, 18 and 39, Chap. VI, Art. XVII, Act of May 14, 1915, P. L. 312.

Section 1, Act of March 31, 1915, P. L. 38.

Section 1 to 9, inclusive, Act of April 9, 1915, P. L. 70.

Sections 1 to 4, inclusive, Act of June 5, 1915, P. L. 846.

Sections 1 to 5, inclusive, Act of May 3, 1917, P. L. 141.

Sections 11, Act of June 3, 1919, P. L. 366.

(5) *Those Responsible for Enforcement.* State police responsible for protection of water supply. Those responsible, except where otherwise specifically stated in the law, are State and local health authorities.

WOOD ALCOHOL* (METHYL ALCOHOL).

(1) *Purpose.* Makes it unlawful to sell, offer or expose for sale, or possess with intent to distribute or sell any food, drug, preparation or mixture intended for internal use, or for application to body of another, as hair tonic, bayrum or similar preparation, which contains methyl or wood alcohol.

Exempts preparations plainly labelled for external use on animals and medicated liniments for external use.

(2) *Penalties.* For violating any of the provisions of this Act—(a misdemeanor)—a penalty of \$500.00 for each offense.

(3) *Courts Before Which Action is Brought.* Alderman, justice of the peace, magistrate or Court of Quarter Sessions.

(4) *Act of Assembly.* Sections 1, 2, and 3, Act of July 17, 1919, P. L. 1031.

(5) *Those Responsible for Enforcement.* State and local health, food and drug authorities.

* (Act of Assembly No .408, 1919.)



PART II.

REGULATIONS OF THE ADVISORY BOARD OF THE PENNSYLVANIA DEPARTMENT OF HEALTH.

Since the dates of their adoption as regulations some of the Advisory Board Regulations have been enacted into laws by Acts of Assembly. In such cases their provisions are recited in the foregoing synopsis of laws.

Nearly all of the original regulations are reproduced, however, in the form in which the Advisory Board adopted them. Whenever duly promulgated and published, as required by law, the regulations have the force of law.

On May 17, 1920 Regulations 35 to 40 inclusive were adopted by the Advisory Board. Wherever these new regulations cover matters previously dealt with by Advisory Board Regulation the later Regulation will govern in every case.



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32. Regulation regarding quarantine of carriers of diphtheria bacilli, cholera bacilli, dysentery bacilli, typhoid bacilli and paratyphoid bacilli.
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34. Regulation relating to quarantine, isolation and disinfection in the several communicable diseases.
35. Regulation relating to quarantine period for anterior poliomyelitis.
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37. Regulation relating to quarantinable diseases in educational and other institutions and places where students live.
38. Regulation relating to admission of children to school after vaccination and reissuance of temporary certificates of vaccination.
39. Regulation relating to exclusion from school of children with certain diseases.
40. Regulation relating to sanitary regulations, sewage disposal, decaying matter, stagnant water, objectionable establishments, industrial wastes and water supply.

1. *Precautions to be observed by physicians, health officers, clergymen, and undertakers in visiting premises infected with smallpox.*

Whenever possible, physicians should visit smallpox cases after making all regular calls for that day.

If the physician has not been successfully vaccinated within five years vaccination should be attempted before attending such a case.

The physician should carry in a bag intended for this purpose only, a gown which extends nearly to the floor, fitting close at the neck and wrists and entirely covering all clothing.

The bag should also contain a hood or protective covering for the hair, and a pair of high close-fitting rubbers.

The visit to the sick room should, of course, be as brief and as free from unnecessary handling of the patient as is consistent with a proper understanding of the patient's condition.

A small outer room or hallway in such a house should be set apart for the use of the physician where soap and water, towels and antiseptics are provided for the purpose of cleansing exposed surfaces. Upon entering this room after the visit to the patient, the rubbers, hood, and gown should be removed, sprinkled well with liquor formaldehydi U. S. P., or formalin, rolled into a compact bundle and placed within the bag into which the disinfectant should be again sprinkled.

When it is desirable to leave these articles at the house the rubbers may be wiped off with liquor formaldehydi U. S. P., or formalin, and the hood and gown boiled at least thirty minutes, wrung out and allowed to dry before the physician again visits the patient.

The physician should then thoroughly wash the hands, face, and beard with soap and water.

The soap should be thoroughly removed and all exposed surfaces, including the hair and scalp, washed with a solution of corrosive sublimate (bichloride of mercury) 1-1000. This in turn may be removed with plain water.

The mouth and nose should be sprayed with a solution of equal parts of liquor antisepticus and water.

When health officers are called upon to visit premises infected with smallpox for any purpose they shall observe all the precautions advised for physicians.

When disinfecting such premises they had best leave their gown and hood in the last room to be disinfected, and never under any circumstances shall such protective garments be used in performing disinfection in a case of diphtheria or scarlet fever, or vice versa, unless they have been thoroughly disinfected with liquor formaldehydi U. S. P. or formalin, or have been boiled at least one hour in the meantime.

They should provide themselves with a number of gowns and hoods and a convenient canvas or leather bag to carry them in.

A glass stoppered bottle containing liquor formaldehydi U. S. P. or formalin should also be carried in the bag for sprinkling infected gowns, hoods, and the inside of the bag after such garments have been worn and replaced.

Clergymen shall not be denied the privilege of answering summons to attend a case of contagious disease.

They must, however, obtain instructions from the local board of health, or the local representative of the State Department of Health, in case there is no board of health, and conform strictly to such instructions.

In communities having no board of health they shall provide themselves with the protective gown, hood, etc., and disinfect subsequently in the manner and form suggested for physicians.

The undertaker, like the physician and health officer, should provide himself with a leather or canvas bag, to be used only for the purpose of carrying protective gowns, hoods and rubbers to be worn whenever such bodies are to be prepared for burial. Such protective covering used by them should be well sprinkled with liquor formaldehydi U. S. P. or formalin, rolled into a compact bundle and boiled at the earliest opportunity.

Upon leaving the premises the disinfection of exposed surfaces should be thorough as detailed under suggestions for physicians. Adopted by the Advisory Board, January 23, 1906.

2. *Rules and regulations as to quarantining certain communicable diseases and defining quarantine.* The following diseases require *absolute quarantine*: Bubonic plague, cholera, leprosy, smallpox, yellow fever, and typhus fever, and quarantine shall be continued until raised by an authorized agent of the Department of Health.

Absolute quarantine includes: First, absolute prohibition of entrance to or exit from a building or conveyance, except by officers or attendants authorized by the health authorities, and the placing of guards, if necessary, to enforce this prohibition; second, the posting of a warning placard, which states the name of the disease, in a conspicuous place or places on the outside of the building or conveyance; third, the prohibition of the passing out of any object or material from the quarantined house or conveyance; fourth, provision for conveying the necessities of life under certain restrictions, to those in quarantine.

The following diseases require *modified quarantine*: Epidemic cerebrospinal meningitis, diphtheria, measles, German measles, chicken-pox, mumps, whooping cough, scarlet fever, and relapsing fever.

Modified quarantine includes: First, prohibition of entrance and exit, as in absolute quarantine, except in the case of certain members of the family authorized by the health authorities to pass in and out under certain definite restrictions; second, the placing of a placard as before; third, isolation of patient and attendant; fourth, prohibition of the carrying out of any object or material unless the same shall have been thoroughly disinfected.

The wage earner is allowed, under modified quarantine, to continue work provided he at no time comes in contact with the patient and that he has a room entirely separated from the patient and those attending the same, as provided in instructions.

In permitting householders and wage earners to continue work when cases of diphtheria, scarlet fever, or epidemic cerebrospinal meningitis (spotted fever) appear upon the premises, the greatest

care should be taken to prevent the carrying of the infection, and such a person shall not be employed in an establishment in which is conducted the production, sale, or manufacture of fabrics, wearing apparel, upholstered furniture, bedding, foodstuffs, cigars, cigarettes, candy, etc. If so employed he should leave the premises after taking an antiseptic bath and having his clothing disinfected, and thereafter remain away from the premises up to the time of the recovery of the last patient and the disinfection of the household.

Failure to observe the rules of modified quarantine will result in an absolute quarantine over the whole household for the entire period of quarantine. Adopted by the Advisory Board, July 25, 1907.

3. *Rules and regulations governing the disinfection of school buildings.* To carry out provisions of the act of April 27, 1905, the Department of Health makes it a rule and regulation that all school directors, trustees, principals and presidents of schools and colleges outside of the cities in this State, for the protection of the health of all pupils and students, and of the entire community as well, pay prompt and regular attention to the disinfection of buildings used for educational purposes immediately after the discovery of any communicable disease within said building.

Circulars containing suggestions as to methods of disinfection may be had on application to the State Department of Health. Adopted by the Advisory Board, January 23, 1906.

4. *Rule and regulation as to isolation in case of contagious disease in certain schools.* Upon the appearance of contagious disease in a college dormitory, boarding school, or seminary, the patient should immediately be taken to a contagious disease hospital or an isolation building.

If it is not possible, the patient and nurse or attendant must be strictly isolated in a room as remote as possible from other persons. Adopted by the Advisory Board, January 23, 1906.

5. *Rules and regulations to be followed in exposing fruit and vegetables on sidewalks, pavements, and exposed places.* No firm, person, or corporation shall expose for sale on any sidewalk or pavement or other exposed place any fruit, vegetables, or other articles of food which are eaten uncooked, unless such fruit, vegetables, or other articles of food are thoroughly screened and protected from flies, and unless they are on elevated stands at least twenty-four inches above the level of the sidewalk or pavement. Adopted by the Advisory Board, January 14, 1915.

6. *Rules and regulations concerning towels and barbers' brushes.* No person, persons or corporation within the Commonwealth of Pennsylvania shall furnish for public use any towel unless such towel be laundered or discarded after each individual use.

Barbers are hereby forbidden to use a common brush for brushing the eyes of their patrons unless such brush be disinfected after each individual use. Adopted by the Advisory Board, January 3, 1913.

7. *Additional diseases to be reported.* Every physician practising in any portion of this Commonwealth, who shall treat or examine any person suffering from, or afflicted with paratyphoid fever, an-

thracosis, arsenic poisoning, brass poisoning, carbon monoxide poisoning, lead poisoning, mercury poisoning, natural gas poisoning, phosphorus poisoning, wood alcohol poisoning, naphtha poisoning, bisulphide of carbon poisoning, dinitrobenzene poisoning, caisson disease (compressed-air illness), shall, if said case shall be located in a township of the first class, a borough, or a city, forthwith make a report in writing to the health authorities of said township, city, or borough; and, if said case shall be located in a township of the second class, or a city, borough, or township of the first class not having a board of health or body acting as such, to the State Department of Health. Adopted by the Advisory Board, January 14, 1915.

8. *Rules and regulations concerning public drinking cups and eating utensils.* Those responsible for establishing or conducting any public drinking place in the Commonwealth of Pennsylvania are hereby forbidden to furnish or permit others to furnish or keep any common drinking vessel for common use at any such drinking place, provided this rule and regulation shall not preclude the use of vessels which are cleansed by washing in boiling water or are disinfected or destroyed after individual use. Public places within the meaning of this regulation shall include common carriers, private, public, parochial or Sunday schools, industries, factories, theatres, shops, offices, hotels, etc., etc.

Proprietors or persons in charge of public eating places are hereby forbidden to use drinking vessels, dishes, spoons, knives, forks, finger bowls and other eating utensils which have not been thoroughly cleansed after each individual use. Adopted by the Advisory Board, January 3, 1913.

9. *Regulations concerning medical inspection in schools, adopted by the Advisory Board, January 5, 1910.* The Commissioner of Health is authorized to make, at least twice a year, a medical inspection of schools which shall include the examination of the nose, mouth, eyes and ears of every pupil attending the public schools of the Commonwealth that are located in the rural districts outside of the limits of the cities, boroughs and townships of the first-class.

10. *Regulations concerning reporting of impetigo contagiosa and scabies, adopted by Advisory Board, January 3, 1913.* All physicians practicing within limits of the State shall make an immediate report of each and every case of scabies and impetigo contagiosa.

The Commissioner of Health shall be authorized to distribute free typhoid vaccine whenever in his opinion it is advisable.

11. *Regulation concerning medical inspection of employes in hotels, public eating places, etc., adopted by Advisory Board, January 14, 1915.* First. No person or persons, firm, corporation or common carrier, operating or conducting any hotel, restaurant, dining car or other public eating place in this Commonwealth, shall hereafter employ or keep in their employ any person or persons in the capacity of cook, waiter, chambermaid, kitchen help or other house servants who are suffering from or who are carriers of any communicable disease, and all persons so employed, who at the time of the adoption and promulgation of this regulation are suffering from

or are carriers of any communicable disease, must be excluded at once from such employment in any hotel, restaurant, dining car or other public eating place, provided that if any person or persons, firm, corporation or common carrier shall institute and maintain a medical inspection for their cooks, waiters, chambermaids, kitchen help and other house servants at intervals of at least twice a year for the purpose of excluding from such employment persons suffering from or carriers of communicable diseases and shall thereupon promptly exclude from such employment any person or persons found to be suffering from or carriers of a communicable disease, they shall be considered as complying with the provisions of this Regulation unless in the interim between such inspection the diseased condition is manifest or unless notice of the diseased condition has been served in writing upon the management of such hotel, restaurant, dining car or other public eating place by a physician or by the health authorities.

12. *Rules and regulations for quarantine of Infantile Paralysis (Acute Anterior Poliomyelitis) adopted by the Advisory Board of the Department of Health of the Commonwealth of Pennsylvania, July 8 and August 12, 1916.* 1. Upon receipt by the health authorities of any township of the first class, borough or city, or by a health officer of the State Department of Health of a report of the existence of a case of acute anterior poliomyelitis, the said health authorities or the health officer of the State Department of Health, as the case may be, shall quarantine or cause to be quarantined the premises in which such disease exists, and any person or persons who has or have been exposed thereto, in the manner prescribed by the following rules and regulations, and shall post or cause to be posted upon the premises in which said disease may be located, a placard upon which shall be printed in conspicuous letters the name of the said disease, with the warning that the said premises are quarantined and that no person or persons other than the attending physician and trained nurse shall enter or leave the said premises except by permission of the health authorities, and setting forth the penalties prescribed by the act of May 28th, 1915, P. L. 617, for violations of quarantine.

2. The quarantine period for acute anterior poliomyelitis shall be a minimum period of thirty (30) days from the date of onset, or until complete recovery, or the death or removal of the patient.

3. The placard or placards shall remain in place until the expiration of the quarantine period and shall only be removed by the health officer, at which time he shall disinfect the premises. After such disinfection the householder shall thoroughly cleanse the room occupied by the patient and all articles of bedding, clothing, etc., with soap and water, and shall thoroughly air the room and admit as much sunlight as circumstances will permit.

4. Quarantine restrictions for acute anterior poliomyelitis relating to school attendance, exposure of patient in public places, use of conveyances by persons suffering therefrom, sale of bedding, clothing, etc., burial of bodies and funerals of persons dying therefrom, shall be the same as is now provided for diphtheria and certain other diseases by sections 5, 10, 15, 16, 19, 20 and 21 of the act of May 28th, 1915, P. L. 617.

5. Children under sixteen (16) in a premises quarantined for poliomyelitis, but themselves not affected with the disease, shall not

be permitted to attend any school, church service, theatre or moving picture show during the quarantine period.

6. All doors and windows in rooms occupied by persons suffering from acute anterior poliomyelitis must be screened from flies and other insects.

7. No shipment of second-hand furniture or household goods shall be received in Pennsylvania, unless accompanied by a certificate from the health authorities, stating that it has not come from a house where there has been a case of infantile paralysis during this epidemic.

At the meeting of the Advisory Board held July 25, 1907, certain regulations concerning the report of communicable diseases were adopted. These regulations were subsequently enacted into laws by Act of Assembly. Accordingly the regulations are not reproduced.

At the meeting of the Advisory Board January 23, 1916, regulations were adopted concerning a list of diseases requiring isolation and exclusion from school of patients and those exposed to them; periods of exclusion from school; and a list of diseases requiring exclusion from school only of persons so affected. As these regulations have been incorporated into laws passed subsequent to this meeting of the Advisory Board they are not here reproduced.

13. Regulations concerning control of venereal diseases, adopted January 21, 1918.

First. Syphilis, gonorrhea and chancroid are infectious diseases, highly dangerous to the public health and a special menace to the military organizations of the United States in the time of war; therefore it is the duty of the State Department of Health and all public health authorities to adopt and enforce every precaution consistent with existing laws to prevent the spread of the infection therefrom.

Second. The Commissioner of Health of the Commonwealth of Pennsylvania is hereby authorized to prepare and furnish to the practicing physicians of the Commonwealth circulars of instructions advising persons afflicted with any of the said diseases as to what precautions must be taken in order to prevent communication of the disease to others.

Third. It is hereby declared the duty of every physician when first attending a person afflicted with syphilis, gonorrhea or chancroid to deliver to such person one of the circulars of information and instruction furnished him by the Commissioner of Health for the diseases with which such person is afflicted.

Fourth. Any person suffering with syphilis, gonorrhea or chancroid to whom a circular of instructions has been delivered who shall wilfully fail, neglect or refuse to practice the precautions provided in said circular is hereby declared to be a menace to the public health, and the State Department of Health or any local Board or Department of Health is hereby authorized and directed to place such person under quarantine, together with the premises on which he or she may have been found, and to continue such quarantine until a certificate of recovery or noninfectiousness signed by a practicing physician is furnished for such case to the said health authorities, such quarantine to be established and maintained in the same manner that quarantine is established and maintained for other com-

communicable diseases in accordance with the provisions of the Act of Assembly of May 28, 1915.

Fifth. The Commissioner of Health is hereby authorized and directed to post notices in all public toilets in the Commonwealth of Pennsylvania warning the public of the danger from venereal diseases and the necessity for prompt and proper treatment, such notices to be supplemented wherever possible by directions as to where and at what periods free treatment may be had at a genito-urinary dispensary of the Department of Health or other free dispensary.

Sixth. All persons are hereby notified and cautioned that the said notices provided for in the above regulation are placed in public toilets in accordance with a rule and regulation of the State Department of Health of the Commonwealth of Pennsylvania, and that any person or persons who shall mutilate, deface or destroy any such notice will by so doing be violating a rule and regulation of the State Department of Health, and will be subject to the penalties provided by the Act of Assembly of April 27, 1905, for such violation.

14. *Regulations concerning construction of certain institutions in townships of the second-class. Adopted by Advisory Board, July 25, 1918*.* On and after the adoption and promulgation of this regulation, no public, private, charitable, philanthropic, or other institution for the treatment of disease, and no educational institution or orphanage maintaining dormitories and living rooms shall be constructed in any township of the second-class until the proposed site for the same and certified plans and specifications for the construction of the same shall have been approved by the Commissioner of Health.

15. *Regulation concerning Waterworks and Garbage Disposal Plants. Adopted by Advisory Board, July 25, 1918*.* On and after the adoption and promulgation of this regulation no waterworks or garbage disposal plant shall be constructed in connection with any institution mentioned in Regulation 14, or in any residential development connected with any industry, and no extension of any such existing waterworks or garbage disposal plants shall be made until after certified plans and specifications for such construction or extension shall have been approved by the Commissioner of Health.

16. *Regulation Concerning Reports from Institutions. Adopted by Advisory Board, July 25, 1918*.* After the promulgation of this regulation and prior to the first day of January, 1919, the superintendent or person in charge of every institution for the treatment of disease, and every educational institution or orphanage maintaining dormitories and living rooms located in second-class townships in this Commonwealth shall furnish to the Commissioner of Health a report in writing over his own signature and official title, giving the name, character, capacity and exact location of such institution.

17. *Regulation Concerning Special Reports of Communicable Diseases.. Adopted by Advisory Board, July 25, 1918*.* Every superintendent or person in charge of any institution mentioned in Regulation 14 of these regulations shall forthwith report to the Commis-

*Not legally promulgated by advertisement.

sioner of Health in writing or if possible by telegraph or telephone the first appearance of quarantinable disease in his or her institution and shall thereafter follow the advice and instructions of the Commissioner of Health as to measures to be adopted for controlling the outbreak of such disease and preventing its becoming epidemic in such institution.

This regulation shall not be interpreted in any way to relieve physicians from their duty forthwith to report cases which they may treat or examine in any such institution in the manner and form required by the Act of May 28th, 1915.

18. Regulations concerning Special Quarantine and Isolation. Adopted by Advisory Board, July 25, 1918*. Institutions which maintain an infirmary or hospital for the care and treatment of quarantinable diseases may with the permission of the health authorities, either State or local, transfer patients suffering with such diseases from the living quarters or dormitories to such infirmary or hospital provided that the infirmary or hospital is placarded and quarantined according to law.

All such institutions not maintaining an infirmary or hospital but maintaining a portion of another building, isolated in an effectual manner from the remainder of the building, for the care of such diseases may in like manner be permitted to transfer patients to such portion of a building provided that entrances and exists to such portion of a building be placarded and quarantined according to law.

Upon the removal as aforesaid from dormitories or living quarters in any institution to an infirmary or hospital or part of a building used for such purpose, all other dormitories and living rooms in such institution shall be considered as remaining under quarantine until they, or all necessary portions thereof, have been disinfected by the health authorities, and no other occupants or residents of such dormitories or buildings shall be permitted to leave the institution until disinfection has been performed and they have been regularly released by the health authorities.

The superintendent or other person in charge of such institution shall be held responsible for any violation of this regulation.

19. Regulation concerning Transportation of Persons Suffering with Quarantinable Diseases. Adopted by Advisory Board, July 25, 1918*. Whereas, Section 14 of the Act of May 28th, 1915, provides that no person suffering from a quarantinable disease shall enter a hired vehicle or public conveyance, and that no one having charge of any person so suffering shall permit any one in his charge to enter such a vehicle without previously securing the consent of the health authorities, therefore, this regulation provides that no person suffering from a quarantinable disease shall be permitted to enter any public conveyance or common carrier except as follows:

Persons suffering from glanders, anthrax, leprosy, puerperal fever, typhoid fever, or yellow fever may be permitted to enter and be transported by a public conveyance or common carrier provided the entire vehicle, car, or separate compartment in a car is used for the purpose of transporting only such person and a physician or trained nurse be in charge of such person, and further provided that the person so suffering or the person in charge of the one so suffering has se-

*Not legally promulgated by advertisement.

cured and presents to the person in charge of such vehicle, car, or common carrier, a permit in writing from the local health authorities if the transportation is to be entirely within the municipality, and if to be carried beyond the limits of the jurisdiction of the local health authorities of any municipality also a permit in writing from the Commissioner of Health or his representative, and the person or persons owning or operating the public conveyance or common carrier will be held jointly responsible with the person transported, or those having charge of such person for any violation of this regulation.

Persons suffering from other communicable diseases may only be transported by public conveyance or common carriers when a special permit in writing is issued by the Commissioner of Health and under such conditions as he may direct.

20. Regulation Concerning Method of Treatment of Nightsoil. Adopted by Advisory Board, July 25, 1918*. Re-approved May 17, 1920.

Whereas an Act of Assembly approved the 20th day of May, 1913, provides that night soil used on ground on which vegetables are grown which are eaten uncooked, shall be treated by a process approved by the Commissioner of Health, therefore, the following regulations are hereby adopted and set forth the methods which may be approved for such treatment, it not, however, being the purpose of these regulations to exclude any other process which may be submitted and which in the opinion of the Commissioner of Health may be equally satisfactory.

1. *Kiln Drying:* Night soil which has been treated by the process of drying in kilns constructed and adapted for that purpose, and which has in such kiln been subjected to a temperature of not less than 180 degrees Fahrenheit for a period of not less than two hours may be used as a fertilizer or otherwise on ground whereon vegetables are grown which are eaten uncooked.

2. *Treatment With Quick Lime in Pits:* Night soil which has been deposited in pits specially constructed for that purpose which are practically waterproof, and the tops of which extend far enough above the surface of the surrounding ground to protect them from surface water, may be subsequently used as a fertilizer or otherwise on ground where vegetables are grown which are eaten uncooked under the following conditions:

(a) At the time of each deposit of night soil in a pit a quantity of quick lime shall be added in the ratio of one cubic foot of quick lime for each three cubic feet of night soil.

(b) After each pit is filled its contents shall remain undisturbed for a period of at least six months before any is removed and used upon ground as aforesaid.

(c) A careful record must be kept by the owner or proprietor of such pits of the time when the last quantity of night soil is placed in each pit and the time when the first quantity is removed for use upon the ground.

3. Any person, firm or corporation desiring to operate any kiln or pits for the treatment of night soil shall make application to the health authorities, either the State Department of Health or the local

*Not legally promulgated by advertisement.

Board of Health if located in a district under the jurisdiction of a local Board of Health, for a permit for the operation of such kiln or pits, and no night soil shall be removed from any pit or kiln and used as a fertilizer or otherwise until such permit in writing has been first obtained.

Note: It is suggested that where the pit treatment for night soil is practiced, there should be seven pits provided, each one of them of sufficient size to hold night soil collected for a period of one month or if the quantity of night soil to be treated is too large to be treated practically in one pit a series of pits by 7's should be provided and each pit or series of pits filled during any one month sealed for the required period of six months. This will permit a continuous use of the system with one pit or series of pits available for the quantity collected during each month.

21. *Regulation Concerning Disposal of Night soil. Adopted by Advisory Board, July 25, 1918*. Re-approved May 17, 1920.*

Whereas the disposal of night soil is well recognized as a public health problem and the improper disposal is likely to be a menace to health and injurious to the purity of public water supplies; and *whereas*, under authority of a special Act of Assembly regulations have been adopted for the treatment of night soil to be used upon ground upon which vegetables are grown which are eaten uncooked, therefore, under the general powers conferred upon the Department of Health by Act of Assembly, the following regulations are hereby adopted regulating the disposal of night soil by using it upon ground not so used or intended to be used.

1. Before night soil is disposed of by spreading it upon any ground in the Commonwealth of Pennsylvania an application must be made in writing by the owner of the ground to the State Department of Health describing the piece or parcel of ground proposed to be used, its size, exact location and distance from dwelling houses and water courses, and stipulating that in the use of said ground the rules and regulations of the State Department of Health shall be faithfully observed.

2. No night soil shall be spread upon any ground at any one time in a greater quantity than at the ratio of one hundred cubic yards of night soil to one acre of ground.

3. Night soil spread upon the ground shall be plowed under to a depth of at least six inches within three days from the time when same was deposited on such ground.

4. After any particular section of ground devoted to the disposal of night soil has been spread upon and plowed under that particular section or parcel or ground so used shall not be again used for the same purpose and night soil again spread upon it until after a crop has been planted and harvested thereon or for a period of sixty days after the last plowing under; and any piece or parcel of ground especially devoted to the disposal of night soil for which a permit has been issued by the State Department of Health and upon which night soil has been deposited and plowed under one or more times during any year shall not be used for the same purpose during the succeeding year.

*Not legally promulgated by advertisement.

Note: It is suggested that wherever possible night soil should be mixed with quick lime in the quantity of one part lime to three of night soil. This mixture will increase the value of the fertilizer and add to the safety of its disposal.

22. Regulations of the Advisory Board of the Department of Health, Commonwealth of Pennsylvania, fixing the maximum period of incubation for certain diseases.

Approved June 6, 1919.

The maximum period of incubation (between the time of exposure to the disease and the date when its development might be expected), of the diseases mentioned below shall be as follows:

Acute poliomyelitis (infantile paralysis),	14 days
Chicken pox,	16 days
German Measles,	14 days
Measles,	14 days
Mumps,	21 days
Scarlet fever,	7 days
Smallpox,	18 days
Diphtheria,	5 days
Whooping cough,	14 days
Typhoid fever,	21 days

23. Regulation of the Advisory Board of the Department of Health, Commonwealth of Pennsylvania, authorizing the placarding and quarantining of contacts of certain communicable diseases.

Approved June 6, 1919.

Where persons are known to have been exposed to diphtheria, scarlet fever, or smallpox, health authorities may, when in their opinion it is necessary, placard and quarantine the premises, using the following form for the placard:

WARNING—SCARLET FEVER: (DIPHTHERIA; SMALLPOX)

An inmate of this house is known to have been exposed to scarlet fever (diphtheria, smallpox) and is required to remain on the premises until released by the health authorities.

24. Regulation of the Advisory Board of the Department of Health, Commonwealth of Pennsylvania concerning the method of disinfection to be followed after certain diseases.

Approved June 6, 1919.

At the termination of the quarantine period or upon death or removal of a case of anterior poliomyelitis, German measles, glanders (farcy), measles, mumps, typhoid fever, paratyphoid fever and whooping cough disinfection shall be performed as follows:

The room or rooms occupied by the patient shall be subjected first to a mechanical cleansing followed by application of a solution of one

to one thousand bichloride of mercury (corrosive sublimate) or a solution of two teaspoonfuls of creolin to a gallon of water.

When the health officer establishes quarantine on a premises for any of the above mentioned diseases, he shall fully instruct the householder regarding the requirements to be observed by all persons under quarantine, and shall advise him of the date upon which quarantine may be raised if no further cases develop. He shall direct that when the quarantine period has expired the householder shall proceed to cleanse and disinfect the room or rooms occupied by the patient, according to the circular on sanitary cleaning which the health officer shall furnish to the householder.

At the termination of the legal quarantine period or upon death or removal of the patient the health officer shall visit the premises and if he finds that the sanitary cleaning has been accomplished as required, he shall remove the placard and terminate quarantine.

25. Regulation of the Advisory Board of the Department of Health, Commonwealth of Pennsylvania requiring private funeral for certain diseases in addition to those mentioned in Section 19, Act of May 28, 1915.

Approved June 6, 1919.

All services held in connection with the funeral of the body of any person who has died of measles, mumps, German measles, and whooping cough shall be private and the attendance thereat shall include only the immediate adult relatives of the deceased, who may at the time not be under absolute quarantine restrictions, and the necessary number of adult pallbearers; and any advertisement of such funeral shall state the cause of death.

The body of a person who has died of any such disease shall not be taken in any church, chapel, public hall or public building for the purpose of holding funeral services.

26. Regulation of the Advisory Board of the Department of Health, Commonwealth of Pennsylvania, to supplement Regulation 25 adopted by the Advisory Board and approved June 6th, 1919.

Approved August 6, 1919.

All services held in connection with the funeral of the body of any person who has died of chicken pox shall be private and the attendance thereat shall include only the immediate adult relatives of the deceased, who may at the time not be under absolute quarantine restrictions, and the necessary number of adult pallbearers; and any advertisement of such funeral shall state the cause of death.

The body of a person who has died of chicken pox shall not be taken in any church, chapel, public hall or public building for the purpose of holding funeral services.

27. Regulation of the Advisory Board of the Department of Health, Commonwealth of Pennsylvania, Regarding Vaccination.

Approved August 6, 1919.

INSPECTION AND CERTIFICATION. Eight to fifteen days after vaccination the vaccinating physician shall inspect the site and if a typical vesicle has appeared shall issue a certificate of successful vaccination. Under no other circumstances shall he issue such a certificate.

All certificates of successful vaccination shall be in the form prescribed by the Commissioner of Health and shall state that the vaccination site was thus inspected subsequent to vaccination and found to indicate successful vaccination. (Form 75.)

Certificates confirming previous successful vaccination as shown by a cicatrix or of previous smallpox as shown by cicatrix, may be issued by legally qualified physicians on forms prescribed by the Commissioner of Health. (Forms 76 and 77.)

TEMPORARY CERTIFICATES in reference to vaccination or non-vaccination shall be issued only by the County Medical Director, his authorized deputy or the Medical Officer of a borough or city Board of Health, each for his respective community.

UNSUCCESSFUL VACCINATIONS. When a school child has been twice unsuccessfully vaccinated within a period of three months he may be admitted to school after being again vaccinated, free of charge, by or in the presence of the County Medical Director, his authorized deputy or the medical officer of a borough or city Board of Health. A temporary certificate (Form 75-A) will be issued by said officer and it may be countersigned by the attending physician. Said certificate will admit the child to school for the current school year, only. If success results from this third vaccination, a regular certificate of successful vaccination shall be issued by the officer who issues the temporary certificate, after a typical vesicle or a typical cicatrix has appeared.

ALLEGED PHYSICAL UNFITNESS FOR VACCINATION. When the family physician claims that physical conditions contraindicating vaccination exist in the school child, the County Medical Director, his authorized deputy or the medical officer of a borough or city with an organized Board of Health shall examine the child resident therein and decide whether physical unfitness for vaccination exists. If possible, the said family physician shall be present at the examination. If vaccination is deemed inadvisable, a temporary certificate conspicuously marked "Good for current school year, only," and authorizing the admission of the child to school for this period shall be issued and signed by the said officer. This authorization will admit the child to school for but one year, after which he will be vaccinated or excluded from school.

LOST CERTIFICATE. The School Medical Examiner or the family physician may issue to any school child who has no certificate of vaccination but who has been successfully vaccinated a certificate upon Form 76, after examination and determination that a clearly defined vaccination scar exists. If sufficient evidence of previous smallpox exists he may similarly certify upon Form 77. Such certificate will be accepted by principals or teachers in lieu of a certificate of vaccination.

28. Regulation of the Advisory Board of the Department of Health, Commonwealth of Pennsylvania, Regarding Reporting by Householders and Others of Cases of Communicable Disease.

Approved August 6, 1919.

From and after the passage and promulgation of this regulation every householder or proprietor of a hotel or lodging house, having

on his premises any person for whom no physician has been called and who shows an unusual skin eruption or rash or complains of a sore throat and is too sick to work or play and has spasms of violent coughing, shall report these facts immediately to the health officer of the city, borough or township, giving the name of the person and the location of said premises.

29. Regulation of the Advisory Board of the Department of Health, Commonwealth of Pennsylvania, Regarding the Classification of Venereal Diseases and the Procedure Incident Thereto.

Approved August 6, 1919.

From and after the passage and promulgation of this regulation, gonorrhea, and syphilis in its primary and secondary stages and chancroid are declared transmissible diseases subject to quarantine when in the opinion of the attending physician or the county medical representative of the State Department of Health, the character, occupation, habits or neglect of treatment and methods to protect others, make those infected menaces to public health.

30. Regulation of the Advisory Board of the Department of Health, Commonwealth of Pennsylvania, Regarding the Rental or Temporary Furnishing of Certain Articles to be used at Funerals in Private Houses.

Approved August 6, 1919.

From and after the promulgation of this regulation no undertaker, or person or persons acting in the capacity of undertaker, or funeral director, or any other person, shall rent or temporarily furnish for use at a funeral in any private house, any carpet, rug, drapery, clothing or artificial flowers.

INTERPRETATION.

Harrisburg, Pa., December 3, 1919.

MEMORANDUM:—

The regulation of the Advisory Board of the Department of Health of Pennsylvania, approved August 6th, 1919, concerning the Rental or Temporary Furnishing of Certain Articles to be Used at Funerals in Private Houses should be interpreted literally. This regulation did not contemplate the prohibition of use by undertakers of any of the usual paraphernalia or equipment necessary to prepare and lay out the bodies of the dead.

It will be noted that the regulation prohibits the renting or temporary furnishing for use at a *funeral* of any carpets, rugs, draperies, clothing or *artificial* flowers. By carpets and rugs are meant floor coverings. By draperies is meant room hangings, such as window or door curtains. By clothing is meant garments intended for wear by relatives or others. It does not refer to any garments used in preparing or dressing a corpse for burial which are to be buried with the corpse.

All undertakers are responsible for the proper washing, cleansing and disinfecting after use of such articles of their equipment as come in contact with dead bodies.

By Direction of the Commissioner of Health.

31. *Regulation of the Advisory Board of the Department of Health, of the Commonwealth of Pennsylvania, Regarding Whooping Cough Quarantine.*

Approved October 14, 1919.

From and after the passage and promulgation of this regulation, when a premises is quarantined for whooping cough, wage-earners and adult members of the household may be given quarantine permits with the usual restrictions. Children of the household who are known to have had whooping cough may be permitted by the Health Authorities to continue school attendance during the quarantine period.

32. *Regulation of the Advisory Board of the Department of Health of the Commonwealth of Pennsylvania, Regarding Quarantine of Carriers of Diphtheria Bacilli, Cholera Bacilli, Dysentery Bacilli, Typhoid Bacilli and Paratyphoid Bacilli.*

Approved October 14, 1919.

From and after the passage and promulgation of this regulation, persons known to be carriers of the following pathogenic organisms namely,

Diphtheria bacilli, cholera baccilli, dysentery bacilli, typhoid bacilli and paratyphoid bacilli, and who in the opinion of the designated representatives of the Commissioner of Health are menacing to the public health, by reason of their character, occupation, habits or neglect of treatment and of the methods designed to protect others

from infection, may be placed under quarantine, either complete or modified, until such time as they cease to be carriers, as determined in the Department of Health Laboratories, or until released by order of the Commissioner of Health.

33. *Regulation of the Advisory Board of the Department of Health of the Commonwealth of Pennsylvania Regarding Quarantine in Certain Cases of Pulmonary Tuberculosis.*

Approved October 14, 1919.

From and after the passage and promulgation of this regulation, pulmonary tuberculosis is declared to be transmissible and subject to quarantine in such cases of the disease, as in the opinion of the attending physician or the county medical representatives of the State Department of Health or other designated physician representing the Commissioner of Health are menacing to the public health, by reason of the patient's character, occupation and habits or his neglect of treatment and the methods designed to protect others from infection.

34. *Regulation of the Department of Health Passed by the Advisory Board, Relating to Quarantine Isolation and Disinfection in the Several Communicable Diseases.*

Approved December 20, 1919.

In addition to the regulations of the Department of Health heretofore passed and promulgated by the Advisory Board, relating to quarantine, isolation and disinfection in the several communicable diseases, it is hereby ordered and decreed that quarantine in the case of communicable diseases covers not only the protection of the citizens of the Commonwealth against such communicable diseases, but the means by which such protection may be secured and the quarantine enforced, and it is now, therefore, declared that such quarantine may be secured and enforced in the following manners, to-wit:

First: By isolation of the patient in his own home, with his own family.

Second: By isolation of the patient in his own home, separate and apart from the other members of his immediate family.

Third: By removal of the patient by order of the Commissioner of Health from his own home to a place in the State provided for the care and treatment of such communicable disease or diseases.

Every person who violates any order of the Commissioner of Health made in accordance with this regulation, or fails or refuses, or neglects to comply with such order of the Commissioner, shall be deemed to be guilty of a violation of the Act approved the twenty-seventh day of April, A. D. 1905, P. L. 312, by the provisions of which this regulation is passed and promulgated.

35. *Regulation of the Advisory Board of the Department of Health of the Commonwealth of Pennsylvania Relating to Acute Anterior Poliomyelitis Quarantine.*

Adopted May 17, 1920.

From and after the passage and promulgation of this regulation the quarantine period of acute anterior poliomyelitis shall be a minimum period of twenty-one days from the date of onset or until the death or removal of patient.

36. *Regulation of the Advisory Board of the Department of Health of the Commonwealth of Pennsylvania Relating to Reporting by Householders and Others of Cases Presenting Swelling Suggesting Mumps.*

Adopted May 17, 1920.

From and after the passage and promulgation of this regulation every householder or proprietor of a hotel or lodging house, having on his premises any person for whom no physician has been called and who shows swelling of the face or neck suggesting mumps shall report this fact immediately to the health officer of the city, borough or township, giving the name of the person and the location of said premises.

37. *Regulation of the Advisory Board of the Department of Health of the Commonwealth of Pennsylvania Relating to Quarantinable diseases in Educational Institutions.*

Adopted May 17, 1920.

From and after the adoption and promulgation of this regulation the President, Superintendent, or other person in charge of any hospital, house or asylum, or educational institution in which students live, with the exception of such institutions as may be in cities of the first class, shall notify by telephone or telegraph the County Medical Director, or the Commissioner of Health, at Harrisburg, of the appearance of a case of quarantinable disease in such institution. The patient shall be immediately isolated in a hospital or in a room as remote as possible from other persons and such other measures shall be taken to prevent transmission of the disease as shall be approved by the Commissioner of Health.

This regulation shall not be interpreted in any way to relieve physicians from their duty to report forthwith in writing cases which they may treat or examine in any such institution in the manner and form required by law.

38. *Regulation of the Advisory Board of the Department of Health of the Commonwealth of Pennsylvania Relating to the Admission of Children to School Immediately After Vaccination and the Reissuance of Temporary Certificates of Vaccination.*

Adopted May 17, 1920.

1. The Department of Health will countenance the admission to school of a child during the eight to fifteen-day period which must elapse between the time of vaccination and the issuance of a certificate of successful vaccination.

If, at the expiration of this period, the child fails to submit a certificate of successful vaccination, said child must be excluded immediately from school; provided that, if a second vaccination is made at once, the pupil may remain in school until a second period of from eight to fifteen days has expired whereupon exclusion will be en-

forced unless a certificate of successful vaccination is submitted to the school authorities, or unless a temporary certificate of vaccination is submitted to the school authorities.

II. When a temporary certificate of vaccination has become invalid by virtue of the expiration of the current school year, the school child holding said certificate must again be vaccinated, free of charge, by or in the presence of the County Medical Director, his authorized deputy or the Medical Officer of a Board of Health. Said officer shall then issue a new temporary certificate (form 75-A) good for the following current school year only. The certificate may be countersigned by the attending physician.

§9. Regulation of the Advisory Board of the Department of Health of the Commonwealth of Pennsylvania Relating to the Exclusion of Children from School who are Afflicted With Certain Diseases.

Adopted May 17, 1920.

From and after the passage and promulgation of this regulation, "No child or other person suffering from Acute Contagious Conjunctivitis (Pink Eye), Impetigo Contagiosa, Pediculosis Capitis, Pediculosis Corporis, Scabies, Tinea Circinata, Tonsillitis or Trachoma, shall be permitted to attend any public, private, parochial, Sunday or other school; the teachers of public schools and the principals, superintendents, teachers or other persons in charge of private, parochial, Sunday or other similar schools are hereby required to exclude any such persons from said schools, such exclusions to continue until the case has recovered or become non-transmissible.

No child or other person excluded from any school by the provisions of this Regulation shall be readmitted thereto until medically attested to in writing as being incapable of transmitting the disease or condition because of medical treatment or as being recovered. Such attestation may be made by the attending physician, school physician or the local Board of Health.

Every person who violates any order of the Commissioner of Health made in accordance with this regulation, or fails or neglects or refuses to comply with such order of the Commissioner, shall be deemed guilty of a violation of the Act approved the twenty-seventh day of April, A. D., 1905, P. L. 312, by the provision of which this regulation is passed and promulgated.

40. Regulation of the Advisory Board of the Commonwealth of Pennsylvania Relating to the Sanitary Regulations, Sewage Disposal, Decaying Matter, Stagnant Water, Industrial Waste and Water Supply.

Adopted May 17, 1920.

ARTICLE 1.

GENERAL PROVISIONS.

Section 1. The provisions of these sanitary regulations shall apply in all counties of the Commonwealth of Pennsylvania; and shall apply equally to individuals, partnerships, firms and corporations.

Section 2. For the purpose of these sanitary regulations the term "waters of the State," wherever used, shall include all streams and springs, and all bodies of surface and of ground water, whether natural or artificial, within the boundaries of the State.

ARTICLE II SEWAGE DISPOSAL

Section 1. No privy, cesspool or other receptacle for human excrement shall be constructed, maintained or used so that flies have or may have access to the excrementitious matter contained therein.

Section 2. No privy, urinal, cesspool or other receptacle for human excrement shall be constructed, maintained or used which directly or indirectly drains or discharges over or upon the surface of the ground or into any waters of the State.

Section 3. All privies, urinals, cesspools or other receptacles for human excrement shall be cleansed at sufficiently frequent intervals to prevent the contents from overflowing.

Section 4. The transportation of human excrement shall be effected in water-tight containers with tight-fitting covers. Containers shall be thoroughly cleansed after each use.

Section 5. No human excrement or material containing human excrement shall be placed on the surface of the ground, or buried or otherwise disposed of, or where it is likely to gain access to any waters of the State, unless subjected to treatment by a method approved by the Commissioner of Health.

Section 6. The contents of privies, cesspools or other receptacles for human excrement shall not be used on ground within the corporate limits of any city or borough or within 700 feet of any habitation unless subjected to treatment by a method approved by the Commissioner of Health.

Section 7. Sufficient and suitable privy or toilet accommodations, well lighted and ventilated and separated for each sex shall be provided at all places of trade, occupation or business, at all manufacturing plants, railroad stations, public buildings, public markets, mills, depots, churches, theatres, fairs, campmeetings, public grounds, parks, and all other places of amusement.

Section 8. No privy, cesspool or similar receptacle for human excrement shall be constructed, maintained or used on premises where a sewer, which is part of a sewer system from which sewage is discharged into the waters of the State under a permit from the State Department of Health, is accessible.

Section 9. No kitchen or laundry water shall be allowed to discharge or flow into any gutter, street, roadway or public place.

ARTICLE III DECAYING MATTER

Section 1. No garbage, offal, pomace, dead animals, decaying matter or organic waste substance of any kind shall be thrown or deposited in any ravine, ditch or gutter; on any street or highway; into any waters of the State, or be permitted to remain exposed upon the surface of the ground.

Section 2. Manure shall not be allowed to accumulate in any place where it can prejudicially affect any source of drinking water

or where as a source of fly breeding it may become a menace to public health.

Section 3. The carcass of any dead animal not killed for food shall be removed and disposed of by burial or incineration or other method approved by law or the Commissioner of Health within twenty-four hours after death. If the carcass is buried it shall be placed so that every part shall be covered by at least two feet of earth and at a location not less than 100 feet from any waters of the State and not subject to overflow by said waters.

In all cases of death from communicable disease the carcass shall be thoroughly enveloped in unslaked lime.

ARTICLE IV. STAGNANT WATER

Section 1. No person shall maintain or permit to be maintained any pond, privy vault, cesspool, well, cistern, rain barrel, or other receptacle containing water in such a condition that mosquitoes breeding therein may become a public nuisance.

ARTICLE V OBJECTIONABLE ESTABLISHMENTS AND INDUSTRIAL WASTES

Section 1. No person, partnership, firm or corporation maintaining a slaughter house, rendering works, depository of dead animals, glue works, tannery, woolwashing establishment, paper mill, by-product coke oven, dye works, oil refinery, dairy, creamery, cheese factory, milk station or similar establishment; or engaged in the manufacture of gas, chemicals, explosives, fertilizers or similar products; or in the business of soap making, fish oil extraction, bone boiling or similar occupation; shall allow any noxious exhalation, odors or gases that are deleterious or detrimental to public health to escape into the air, or any substance that is deleterious or detrimental to public health to accumulate upon the premises; or be thrown or allowed to discharge into any street, roadway or public place; or be thrown or allowed to discharge into any stream or other waters of the State.

Section 2. All slaughter houses, rendering works, bone boiling establishments, depositories for dead animals, garbage disposal works, piggeries and similar establishments handling organic matter shall have an adequate water supply for the purpose of keeping the place clean and sanitary. All floors shall be constructed of concrete or other impervious material and shall have adequate provision for drainage to a cesspool, to a sewer or treatment works approved by the State Department of Health.

Section 3. No pigsty shall be built or maintained on marshy ground or land subject to overflow, nor within 100 feet of any stream or other source of water supply, nor within 300 feet of any inhabited house or public meeting house on an adjoining property. When garbage is fed to pigs provision shall be made so that all unconsumed garbage shall be removed daily and disposed of by burial or incineration. All garbage shall be handled and fed upon platforms of concrete or other impervious material. Unslaked lime, hypochlorite of

lime, borax or mineral oil shall be used daily in sufficient quantities to prevent offensive odors and the breeding of flies.

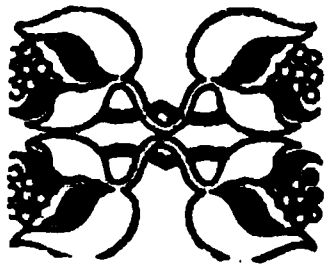
ARTICLE VI WATER SUPPLY

Section 1. No owner or occupant of any premises shall maintain any well, spring, cistern or other source of water supply used for drinking or household purposes to which the public has or may have access and which is polluted or which is so situated or constructed that it may become polluted in any manner that may render such water supply injurious to health.

PART III.
ORDERS, RULINGS AND INSTRUCTIONS
OF THE
COMMISSIONER OF HEALTH.

CONTENTS.

1. Milk Protection and Contagious Disease.
 2. Infantile Paralysis. Rules for Nursing and Care.
 3. Relating to Pennsylvania's Antinarcotic Law and Enforcement.
 4. Relating to Infant Anodynes, Soothing Syrups, etc.
 5. Relating to an Embargo on Wood Alcohol in Toilet Preparations.
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Precautions to be observed for the safe production and handling of milk. When premises from which milk is produced, or sold, are quarantined for diphtheria, scarlet fever, smallpox, typhoid fever, or epidemic cerebrospinal meningitis (spotted fever), the sale of milk from such premises can be continued only under the following conditions:

Those engaged in the production or sale of milk or milk products, or in the cleansing or care of utensils used for this purpose, must be disinfected, together with their clothing and required to keep out of the infected house until a certificate of recovery or death has been issued by the physician in charge, and a certificate of disinfection has been granted by the Health Officer.

Unless such precautions are observed, the County Medical Inspector shall order that the proprietors and their agents shall either discontinue the marketing of milk and milk products, or, if a producer, shall arrange for the transfer of the stock to other premises free from the above mentioned diseases.

**RULES TO BE OBSERVED BY THOSE NURSING AND CARING FOR
PERSONS SUFFERING FROM
ANTERIOR POLIOMYELITIS
(INFANTILE PARALYSIS).**

Proper nursing must be enforced in the treatment of infantile paralysis, in the acute stage of the disease and through the periods of paralysis.

Nursing is a great factor in the treatment of infantile paralysis. A nurse should be selected who will be acceptable to the sick. She must, therefore, be carefully instructed to keep the sick child quite comfortable and happy. She should insist that few if any enter the room of the patient and that it be kept quiet, as a noise often irritates the patient.

The room should be stripped of all unnecessary articles of furniture, ornaments, etc., leaving only shades or plain curtains to control the light. It should be capable of being well ventilated and must be thoroughly screened from insects; in fact the entire house should be screened.

The nurse should wear cap and overall gown while on duty. Soiled bed and body clothing should be thoroughly disinfected. Cheap material should take the place of regular handkerchiefs that it may be burned after use. The discharges from the nose are of an infectious nature. Disinfection of washable clothing may be satisfactorily done by wrapping up the articles in a sheet soaked in a solution of Bichloride of Mercury—one part to one thousand parts of water or eight tablets to one gallon of water—and then carried to where they can be boiled for thirty minutes. The nurse should spray her own mouth, nose, and throat with Dobell's Solution.

The discharges from the nose, bowels, or bladder, or any vomited matter, should be disinfected with a standard solution of Chlorinated Lime. This solution may be made by adding one-half pound of Chlorinated Lime (Bleach) to one gallon of water and in disinfecting discharges the amount of solution used should be equal to the total amount of discharges to be disinfected. When Chlorinated Lime is not available, formaldehyde may be used. A suitable solution is made by adding eight teaspoonfuls of the *Liquor Formaldehydi* (U. S. P.) to a pint of water, or half a pint to a gallon.

No animals of any kind must be permitted in the room.

Light and sound should be reduced to a minimum during the acute febrile stage, while the room should be kept as well aired and as thoroughly cleansed as possible. All insect life must be excluded. The non-afflicted children might have the exposed parts of the body anointed with some insectifuge to keep the insects off.

The nurse should make and keep the bed and pillows of the patient comfortable by every means at her command. The bed linen should be smooth, the coverings not excessive, and the weight of these when much pain is present should be kept from the patient's body and limbs, using frames or hoops when necessary.

Single beds are preferable so that the nurse may be able to get to either side of the patient with the least difficulty and annoyance.

In nervous cases, to which class this disease belongs, especially in those cases in which the covering of the brain is irritated or inflamed, the method of handling the patient counts for much. The arms and legs should be carefully handled and should always be moved from one position to another slowly. It is often best to keep the extremities extended or at the most in slightly flexed positions, although it is at times advisable to change the position in which the different portions of the limbs are placed. The patient should not be kept constantly on the back but should be moved cautiously from one side to the other and then in some instances should be turned to a nearly prone position.

Small soft pillows can be placed between the limbs or beneath the slightly flexed extremities to prevent contractures. Dry heat in the form of warmed light flannels or electric bags is sometimes found comforting, as is also the judicious use of local warm baths, care being taken not to allow the child to remain wet and in drying the parts to do this with skill and gentleness. In cases exhibiting extreme hyperaesthesia even the application of water at a fairly high temperature, say about 100 degrees Fahrenheit, will sometimes give much relief, but should not be resorted to by the nurse without special directions from the doctor.

It has been demonstrated that a poison lurks in the nose. The nurse should pay the closest possible attention to keeping the nose clean, gently spraying with Dobells' Solution or other germicidal solutions, not with peroxide of hydrogen. It is well for the nurse to introduce small loose plugs of disinfected cotton or lambs wool in each nostril. Even in feeding and giving the patient water great attention should be paid to the subsequent rinsing or cleansing of the articles used.

Resultant deformities may be avoided to some extent by keeping the limbs in as near a normal position as possible. Massage should not be used until the fever has largely disappeared and this at first should be simply in the form of gentle laying on of the hands and later a very moderate kneading combined with stroking. The patient should not be taken out of bed, yet the position of the child in bed should be changed to relieve strain.

The use of the catheter is sometimes essential but not until the patient finds it most difficult to void urine without it.

As yet we do not know how the disease is transmitted from one to another. Every known precaution practised with other communicable diseases should be followed until we learn what produces it and how the poison is carried.

**BULLETIN OF
ORDERS, RULINGS
AND
INSTRUCTIONS
RELATING TO
THE ENFORCEMENT OF
THE
PENNSYLVANIA ANTINARCOTIC ACT**

**ORDERS ISSUED BY THE COMMISSIONER OF HEALTH OF
THE COMMONWEALTH OF PENNSYLVANIA PROVIDING
FOR CERTAIN DUPLICATE NARCOTIC ORDER RE-
PORTS BY PHYSICIANS, DENTISTS AND
VETERINARIANS.**

By virtue of that part of section 16 of the Act of Assembly approved July 11, 1917, known as the Pennsylvania Antinarcotic Act, which says, "and the Commissioner of Health may further require persons dealing in, buying, selling, handling, or giving away drugs to make such reports to him, or to the bureau aforesaid, as he may deem necessary or advisable," it is hereby ordered:

That every practicing physician, dentist and veterinarian licensed by the Internal Revenue Commissioner of the United States Treasury Department to buy, prescribe and dispense opium, etc., under the regulations provided by law in the Act of Congress approved December 17, 1914, shall, after January 31, 1919, make legible carbon or other duplicate copies of the "Order Form for Opium, etc.," at the time they make the original entries thereon, in addition to the "Duplicate" carbon copy made for the files prescribed by the U. S. Internal Revenue Department, said additional copies to be made on serially numbered blanks provided by the Pennsylvania Department of Health.

The said serially numbered blanks, duly filled in as carbon or other copies, shall, on or about the first day of each calendar month, be returned by mail to the Commissioner of Health, the first such return being made on or about the first day of March, 1919, for the month of February, 1919.

Public hospitals, sanatoriums, poorhouses, prisons and other public institutions are exempt from the provisions of this order; but private institutions are expected to comply with it.

**ORDERS AND RULINGS OF THE COMMISSIONER OF HEALTH
OF THE COMMONWEALTH OF PENNSYLVANIA RELAT-
ING PARTICULARLY TO THE FURNISHING OF
DRUGS TO ADDICTS.**

WHEREAS, Section 2 of the Antinarcotic Act of July 11, 1917, specifically provides that no dealer shall sell or furnish any of the drugs referred to in the Act in any quantity whatever to any known habitual user of drugs except in pursuance of a prescription of a duly licensed physician or dentist; *And Whereas*, Section 8 of the said Act provides that no physician shall prescribe any of said drugs to an habitual user except for the cure or treatment of some malady other than the drug habit, or unless he proposes to undertake in good faith the cure of the habit, in which case the physician is required to make a report in writing to the proper officer of the board of health or of the State Department of Health; Therefore, in order that the State Department of Health may have proper facilities for keeping record of habitual users or addicts and may have proper facilities for enforcing this part of the said Act of Assembly, the following orders and rulings are issued to the Bureau of Drug Control and those officers and representatives of the Department especially concerned in the enforcement of the law:—

First: Any relative, employer, guardian or other responsible person interested may make information to the Department of Health in writing, giving the name and residence of any person believed to be or known to be an habitual user of any preparation, remedy or compound containing opium or coca leaves, or any preparation, compound or derivative thereof, and also the source from which it is believed that such habitual user is securing the said drugs. Upon receipt of any such information in writing, the same shall be transferred to the Bureau of Drug Control, in which a card file shall be kept containing the data given in such written information.

Second: Upon receipt of such information, the Bureau of Drug Control shall make or cause to be made an investigation:

(a) Whether or not the alleged habitual user is in fact obtaining any of said drugs at the places designated in the information.

(b) If so, whether said drugs are being furnished upon the prescription of a duly licensed physician.

(c) If so, whether or not said physician has reported the case to the local board of health or to the Department of Health as a case which he has undertaken to cure.

(d) In case the information does not contain the place or dealer from which or from whom the drugs are being secured, the said Bureau of Drug Control shall cause an investigation to be made and records to be examined and checked in the neighborhood in which the alleged addict lives for the purpose of ascertaining, if possible, the source from which the drugs are being secured, and if such information is obtained shall follow the above procedure as to prescriptions, physicians and boards of health.

Third: Information received in accordance with section 1 shall remain in the custody of the Department of Health and the card files therein mentioned in the custody of the Bureau of Drug Control, and nothing contained in said information or cards shall be divulged except in such a manner as may be necessary for the enforcement of the provisions of the Act.

Fourth: If at any time any habitual user of drugs whose name has been listed in the files of the Bureau of Drug Control, either upon information secured in accordance herewith or any other way, shall give satisfactory evidence to the State Department of Health that he has been cured of his addiction, all records and information pertaining to such person shall be destroyed.

Fifth: Any and every investigation made by the Bureau of Drug Control in accordance herewith that shall divulge to the satisfaction of the Commissioner of Health that drugs have been furnished to an addict in violation of the provisions of the said Act of Assembly shall be followed by prosecution in accordance with section 12 of the said Act.

**ORDERS OF THE COMMISSIONER OF HEALTH OF THE
COMMONWEALTH OF PENNSYLVANIA REQUIRING
CERTAIN DRUG REPORTS BY RETAIL DRUG-
GISTS AND PHARMACISTS.**

By virtue of that part of section 16 of the Act of Assembly approved July 17, 1917, known as the Pennsylvania Antinarcotic Act, which reads, "and the Commissioner of Health may further require persons dealing in, buying, selling, handling, or giving away drugs to make such reports to him, or to the bureau aforesaid, as he may deem necessary or advisable," it is hereby ordered that every retail druggist or pharmacist, or other person or employe, filling prescriptions containing:

(1) Opium or coca leaves, or any substance containing opium or coca leaves, or any substance or preparation containing any compound or derivative of opium or coca leaves, and which contains more than two grains of opium, or more than one-fourth grain of morphine, or more than one-eighth grain of heroin, or more than one grain of codeine, or any salt or derivative of them, in one fluid ounce, if the same is liquid; or, if a solid or a semi-solid, in one avoirdupois ounce, of the prescription as written;

(2) Prescriptions directed for external use containing cocaine or any of its salts, or alpha or beta eucaine or any of their salts, or any synthetic substitute for cocaine or eucaine or their salts;

Shall return monthly to the Commissioner of Health, on blanks supplied by him for that purpose, a report on which is entered the following data concerning all such prescriptions:

(a) The name and place of residence of the person for whom the prescription was written; or, if for an animal, the name of the owner thereof.

(b) The name and tile ("M. D.," "D. D. S.," or "V. M. D.") of the physician, dentist or veterinarian who wrote it.

(c) The date it was filled.

(d) The total amount or amounts of the drugs named in such prescription.

Druggists and pharmacists employed in public hospitals, sanatoriums, poorhouses, prisons or public institutions are not required to report prescriptions for drugs furnished to inmates of such institutions; but in private hospitals and sanatoriums they must make report, as required in the Act.

**INSTRUCTIONS ISSUED BY THE COMMISSIONER OF
HEALTH OF THE COMMONWEALTH OF PENNSYLVANIA
ON THE VENDING OF PAREGORIC AND OTHER REME-
DIES CONTAINING SMALL QUANTITIES OF OPIUM.**

Paregoric is a tincture of opium, representing four grams of powdered opium in one thousand mils (thirty-three and eight-tenths fluid ounces) of diluted alcohol, within the meaning of the Act of Assembly approved July 11, 1917, known as the Pennsylvania Antinarcotic Act, the other ingredients being immaterial as regards its use by opium addicts. Variations in strength, or in name, such as "Opii tinctura benzoici," etc., are, within the meaning of the Act, viewed the same as paregoric, even though they may not be labeled as "Paregoric" under the Federal Pure Food and Drugs Act.

Section 2 of the Pennsylvania Antinarcotic Act provides that no preparations, remedies or compounds containing any opium, or any compound or derivative thereof in any quantity whatsoever, may be sold, dispensed, distributed, or given away to, or for the use of, any known habitual user of drugs, except in pursuance of a prescription of a duly licensed physician or dentist.

A known habitual user of drugs, within the meaning of the Act, is a person commonly known to use narcotic drugs, or who is reported by a responsible or informed person as such, or who is known by the person or firm supplying or selling drugs to be an habitual buyer or procurer thereof. The quantity of narcotic drug or drugs used habitually has no bearing on the fact of the habituation or addiction, as any quantity of opium, its derivatives or preparations, taken at intervals over a long period, constitutes habituation or addiction. Therefore, the person who habitually uses paregoric, or any preparation, remedy or compound, similar to paregoric in opium content, or roughly approximating it in opium content, or one containing any opium, its derivatives or preparations, in any amount whatsoever, is an habitual user of opium within the meaning of the Act.

All persons dealing in, selling, supplying or giving away opium, its derivatives or preparations, in any form, paregoric or other, are warned that the frequent sale to, or for the use of, any person of any such preparation, remedy or compound, containing opium or any of its derivatives or preparations, official, proprietary or other, in any quantity whatsoever, will be investigated by the Bureau of Drug Control; and if it is found that any such product is sold, distributed, furnished, supplied or given away to, or for the use of, any person, except on the prescription of a duly licensed physician or dentist or as otherwise provided for in the Act, in quantity exceeding what may in good faith be vended or supplied or given away for the proper purpose for which such drugs are intended, such sale will be construed a violation of the Act.

The burden of proving any exemption or that any sale was made in good faith is imposed upon the defendant by the provisions of the Act.

**COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF HEALTH
BUREAU OF DRUG CONTROL.**

**BABY DROPS, INFANT DROPS, SOOTHING SYRUPS, IN-
FANT ANODYNES**

**An Order Issued to the Bureau of Drug Control and The Division
of Child Hygiene**

WHEREAS, Section 2 of the Pennsylvania Antinarcotic Act provides:

"That no preparations, remedies or compounds containing any opium, or coca leaves, or any compound or derivative thereof, in any quantity whatsoever, may be sold, dispensed, distributed, or given away to, or for the use of, any known habitual user of drugs, except in pursuance of a prescription of a duly licensed physician or dentist."

THEREFORE, It is ruled that an infant or child for whom is frequently purchased, and to whom is habitually or at frequent intervals administered, any proprietary or stock preparation containing any opium, morphine or other substance enumerated in the Pennsylvania Antinarcotic Act, approved July 11, 1917, and without a prescription directing its administration, is a known habitual user of drugs within the meaning of the Act.

The class of preparations known as Infant Drops, if they or any of them contain any of the drugs enumerated in the Act, shall not be sold, dispensed, distributed, or given away to, or for the use of, any infant or child habitually having such a preparation administered to it; nor shall paregoric or other official drug preparation be sold to or for the use of such infant or child if such preparation contains any opium or any derivative thereof, except in pursuance of a prescription of a duly licensed physician or dentist.

The Bureau of Drug Control and the Division of Child Hygiene of the Pennsylvania Department of Health are ordered to warn all persons dealing in, selling, supplying or giving away Infant Drops to, and for the use of, infants and children, that frequent sales to, or for the use of, any infant or child of any such product or preparation containing any of the drugs enumerated in the Act, will be investigated by the proper agents of the Pennsylvania Department of Health; and if it is found that any such product is sold for the habitual or frequent administration thereof to any infant or child, such sale may be construed a violation of the Act, the burden of proving that such sale was made in good faith for the proper emergency purposes for which such preparations are intended being upon the defendant.

The Bureau of Drug Control is directed to require a monthly return, on form 931, of all sales by retail druggists of Baby Drops or Infant Drops, giving the name of the purchaser, the name of the preparation sold, its amount in fluid ounces, and the date of sale.

So ordered, Sept. 17, 1919.

EMBARGO UPON WOOD ALCOHOL

**Department of Health,
Harrisburg, Pa.,
January 19, 1920.**

To: Manufacturers, distributors and dealers of non-official preparations.

On December 31st, 1919, and January 1st, 1920, the Commissioner of Health for the Commonwealth of Pennsylvania by advertisement in the daily newspapers of Philadelphia, Pittsburgh, Scranton, Wilkes-Barre, Reading, Erie, Altoona, Johnstown and Harrisburg, notified manufacturers, distributors and dealers of non-official preparations that they must file with the State Department of Health at Harrisburg by January 8th, 1920, an affidavit setting forth that their preparation did not contain wood alcohol, and on and after that date an embargo would be laid against the preparation of the Manufacturers, distributors and dealers of non-official preparations, who have not filed such an affidavit.

Now, therefore, I, Edward Martin, Commissioner of Health for the Commonwealth of Pennsylvania, by direction of the Advisory Board of the State Department of Health, hereby declare an embargo as of noon, January 19th, 1920, against all such non-official preparations manufactured, distributed and dealt in by such persons who do not appear on the attached list of manufacturers, distributors and dealers. This embargo to stand until lifted by the Commissioner of Health for the Commonwealth of Pennsylvania.

PART IV.

COLLATERAL LAWS AND MODEL ORDINANCES.

CONTENTS.

The following collateral laws are designated by number as here listed and these numbers are arranged in groups showing their applicability to the various divisions and bureaus of the Department of Health. They are necessarily repeated under more than one grouping whenever they affect the activities of more than one division or bureau.

Division or Bureau.	Laws as numbered on following pages.
Accounting,	1
Administration, Central Office,	60, 65
All Divisions and Bureaus,	20, 21, 28, 32, 33
Child Health,	2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 14, 15, 16, 17, 18, 30, 56, 61, 63, 66, 67, 68, 69, 70, 71, 72, 73, 74, 77, 78, 79, 80
Dispensary Division,	64
Drug Control Bureau,	
Engineering Division,	26, 27, 31, 34, 35, 36, 37,
Genito-Urinary Division,	3, 9, 10, 11, 12, 13, 14, 15,
Housing Bureau,	0
Medical Inspection Division,	
Nursing Division,	2, 73, 74
School Health,	45, 46, 47, 48, 49, 50, 51,
Tuberculosis Sanatoria,	64



COLLATERAL LAWS AND SECTIONS PARTICULARLY APPLICABLE TO THE SEVERAL DIVISIONS AND BUREAUS OF THE STATE DEPARTMENT OF HEALTH.

Subject.	Pertains to Activities of.
1. Accounting and Expenditures. Section 1, Act of June 2, 1915, P. L. 312. Sections 10, 11, 12 and 13, Act of June 12, 1913, P. L. 471.	Accounting and Purchasing Divisions.
2. Indecent writings, printings, pictures, photographs, representations and articles, drugs, recipes, etc., to prevent conception, produce abortion, etc. Sections 1, 2, 3, Act of May 12, 1897, P. L. 63.	Genito-Urinary and Child Health Divisions.
3. Regarding abandonment of children under age of 16 years by parent; or permitting them to be or remain in any reputed house of prostitution or assignation, or where opium is smoked. Section 1, 3, Act of May 29, 1907, P. L. 318.	Genito-Urinary and Child Health Divisions.
4. Relating to conviction for fornication and bastardy and collection of money which courts may sentence defendants to pay. Sections 1 to 5, Act of June 7, 1907, P. L. 429.	Genito-Urinary and Child Health Divisions.
5. Relating to protection of children under 15 years of age, by punishing those having care and custody who apprentice them at certain vocations, or retain them in brothels. Sections 2, Act of 1879, P. L. 142.	Genito-Urinary and Child Health Divisions.
6. Relating to taking of female children under 16 years of age for prostitution, etc. Proprietors or keepers of dance houses, concert saloons, theatres, museums, etc., where liquors are sold are prohibited from admitting any minors under 18 years of age unless under charge of parents or guardians. Sections 1, 4, Act of May 28, 1885, P. L. 27.	Genito-Urinary and Child Health Divisions.
7. Prohibits taking or sending minors to immoral resorts. Section 1, Act of March 24, 1909, P. L. 59.	Genito-Urinary and Child Health Divisions.
8. Prohibits procuring, enticing, etc., into Pennsylvania of any woman or girl for immoral purposes. Section 1, Act of May 1, 1909, P. L. 306.	Genito-Urinary and Child Health Divisions.
9. Regarding dissemination of obscene literature, pictures, articles, etc., and making, drawing or printing of indecent or immoral pictures in public places, on walls, fences, etc., or public exhibition of indecent pictures of the human form in a nude or semi-nude condition. Sections 1, 2, 3, 4, Act of May 6, 1887, P. L. 84.	Child Health and Genito- Urinary Divisions.
10. Concerning rape and unlawful carnal knowledge of female child under sixteen years of age. Section 1, Act of May 19, 1887, P. L. 128.	Child Health and Genito- Urinary Divisions.
11. White Slave Traffic Act. Act of June 25, 1910. Sixty-first Congress, Session II, Chap. 395, page 825.	Child Health and Genito- Urinary Divisions.

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| 12. | Defining terms sodomy and buggery.
Section 1, Act of June 11, 1879, P. L. 148. | Pertains to Activities of
Genito-Urinary Division. |
| 13. | Concerning male bawds and bawd money.
Section 1, Act of April 18, 1905, P. L. 202. | Genito-Urinary Division. |
| 14. | Concerning disorderly conduct on public highways.
Section 1, Act of May 2, 1901, P. L. 132. | Child Health and Genito-
Urinary Divisions. |
| 15. | Concerning disorderly conduct on railways, railway
cars, parks and public amusement grounds.
Section 1 and 2, Act of May 21, 1901, P. L.
286. | Child Health and Genito-
Urinary Divisions. |
| 16. | Concerning Sodomy, Solicitation, Obscene Libels,
Seduction, Disorderly Houses, Lewdness, Rape,
etc., Intermarriage, Adultery, Concealing Death
of a Bastard Child, etc.
Consolidating Act of 1860, P. L. 382. | Child Health and Genito-
Urinary Divisions. |
| 17. | Defining and punishing crime of giving or admin-
istering drugs, narcotics or anesthetic agents to
persons by mixing same with food or drink, with
felonious intent.
Section 1, Act of April 24, 1901, P. L. 102. | Child Health and Genito-
Urinary Divisions. |
| 18. | Concerning joints, booths, or other places for smok-
ing or other use of opium.
Section 1, Act of June 10, 1885, P. L. 81. | Child Health and Genito-
Urinary Divisions. |
| 19. | Prohibits throwing of waste paper, ashes, rubbish,
etc., in public streets, or disturbing contents of
receptacles on street or sidewalk.
Act of April 20, 1905, P. L. 227. | Engineering Division and
Housing Bureau. |
| 20. | Classifying townships with respect to population
into two classes and prescribing a form of govern-
ment for each class.
Section 7, Act of April 28, 1899, P. L. 104. | All Divisions and Bur-
eaus. |
| 21. | Providing form of government for cities of second
class.
Art. IV, Section 1, Art. XIX, Section 2, Act
of March 7, 1901, P. L. 20.
Act of June 20, 1901, P. L. 586. | All Divisions and Bur-
eaus. |
| 22. | Examination, licensure, registration and regulation
of plumbers, plumbing inspectors, etc., for first,
second and third-class cities.
Act of June 7, 1901, P. L. 493.
Act of May 24, 1909, P. L. 840.
Act of June 7, 1911, P. L. 630.
Act of June 12, 1913, P. L. 476. | Engineering Division.
Housing Bureau. |
| 23. | Regulating tenement houses and tenement licenses
in first-class cities.
Act of June 7, 1907, P. L. 441. | Housing Bureau. |
| 24. | Empowering boroughs to acquire real estate for gar-
bage and incinerating furnaces, sewage disposal
plants with filter beds, etc., and extension of
sewers.
Act of April 1, 1909, P. L. 79. | Engineering Division. |
| 25. | Sewer construction without petition of majority of
property owners in boroughs.
Act of April 23, 1907, P. L. 97. | Engineering Division. |
| 26. | Taking of property in boroughs and incorporated
towns for public buildings and works and filter
plants. Issuance of permit from State Depart-
ment of Health for use of State waters.
Act of June 1, 1907, P. L. 365. | Engineering Division. |
| 27. | Concerning provisions against fire or panic outside
of first and second class cities through exits, fire
escapes, fire extinguishers, etc.
Act of May 3, 1909, P. L. 417. | Engineering Division.
Housing Bureau. |

	Subject.	Pertains to Activities of.
28.	Bureaus of Health in Departments of Public Safety in second-class cities. Act of April 29, 1911, P. L. 103. Act of March 25, 1913, P. L. 54.	All Divisions and Bureaus.
29.	Prescribing number of water supply fixtures for dwellings in first-class cities. Act of June 7, 1911, P. L. 679.	Housing Bureau.
30.	Regulating construction and repair, use, maintenance, sanitation and condemnation in first-class cities of certain dwellings, houses, tenements and grounds, etc. Act of July 22, 1913, P. L. 879. Act of June 3, 1915, P. L. 954.	Housing Bureau. Child Health.
31.	Empowering Governor to close counties or parts thereof or streams to hunting or fishing, when necessary for public health, etc. Act of May 14, 1915, P. L. 530.	Engineering Division.
32.	Incorporation, government, etc., of third-class cities. Act of June 27, 1913, P. L. 568.	All Divisions and Bureaus.
33.	Government for boroughs. Chap. XVI, Art XVII, Section 18, Act of May 14, 1915, P. L. 312.	All Divisions and Bureaus.
34.	Empowering third-class cities to extend water works pipes beyond city limits, etc. Act of May 31, 1915, P. L. 38.	Engineering Division.
35.	Water supply systems for first-class townships. Act of April 9, 1915, P. L. 70.	Engineering Division.
36.	Annual rental or assessment from property abutting on public sewers in boroughs, etc. Act of May 11, 1915, P. L. 284.	Engineering Division.
37.	Collection of garbage, ashes and other wastes in third-class cities. Act of May 31, 1919, P. L. 358.	Engineering Division. (Nuisance Division).
38.	State Police to enforce laws relating to water supply, etc. Act of June 3, 1919, P. L. 366.	Engineering Division.
39.	To validate certain claims for paving, sewers, etc., in boroughs. Act of June 30, 1919, P. L. 91. Act of June 4, 1919, P. L. 389.	Engineering Division.
40.	Sewage Assessments, etc., in townships of first-class. Act of July 9, 1919, P. L. 797. Act of July 15, 1919, P. L. 978.	Engineering Division.
41.	Classification of School Districts. Sections 101-109. School Code.	Division of School Health.
42.	New School Districts. Section 116. School Code.	Division of School Health.
43.	Independent School Districts. Sections 117-119. School Code.	Division of School Health.
44.	School Directors. Sections 201-208-210-211-226-301-303. Sections 401-405-408. School Code.	Division of School Health.
45.	School Medical Inspection and Hygiene. Sections 1501-1512, inclusive. School Code.	Division of School Health.
46.	Teachers' Health Certificates. Sections 1320-1322. School Code.	Division of School Health.

Subject.	Pertains to Activities of
47. Defective and exceptionally retarded children. Sections 1413-1439-1440. School Code. Act of May 16, 1919, P. L. 196. Act of Feb. 26, 1919, P. L. 3.	Division of School Health.
48. Contagious diseases, quarantine and school exclusion. Sections 4-15-26. Act of July 17, 1919, P. L. 1010. Section 1206. School Code.	Division of School Health.
49. Vaccination of School Children. Act of June 5, 1919, P. L. 399.	Division of School Health.
50. School toilets. Sections 632-633. School Code.	Division of School Health.
51. Sanitary equipment and sanitary requirements. Section 908. Section 1124. School Code.	Division of School Health.
52. Municipal playgrounds. Act of July 8, 1919, P. L. 784.	Division of School Health.
53. Instruction in safety-first methods. Section 1607-A. School Code.	Division of School Health.
54. Relief for children of indigent parents. Section 1424. School Code.	Division of School Health.
55. Importation of defective and delinquent children. Act of July 17, 1919, P. L. 1027.	Division of School Health.
56. Concerning testing of milk for butter fats. Acts of May 23, 1919, P. L. 275 and P. L. 278.	Child Health and Nursing Divisions.
57. Concerning qualification for registration as a pharmacist. Act of May 8, 1919, P. L. 122. Act of June 4, 1919, P. L. 391.	Bureau of Drug Control.
58. Concerning practice of veterinary medicine and veterinary dentistry. Act of May 8, 1919, P. L. 135.	Bureau of Drug Control.
59. Concerning Anatomical Board and length of time bodies may be kept, expenses, etc. Act of May 8, 1919, P. L. 152.	Bureau of Vital Statistics.
60. Abolishing State Quarantine Station, etc. Act of June 26, 1919, P. L. 64.	Administration, Central Office.
61. Requiring ventilation, drainage, sanitation and purity of bakeries, cleanliness of employes, etc. Act of July 9, 1919, P. L. 788.	Medical Inspection, Child Health and Nursing Divisions. (Also Dept. of Labor and Industry).
62. Authorizes courts to remove convicts and persons in jails, work houses, etc., when seriously ill, to other institutions for suitable treatment. Act of May 31, 1919, P. L. 353.	Division of Medical Inspection.
63. Defining cold storage and regulating time of storage of certain food articles. Act of June 26, 1919, P. L. 670.	Child Health, Medical Inspection and Nursing Divisions. (Also Department of Agriculture).
64. Establishing a bureau of rehabilitation for certain physically handicapped persons. Act of July 18, 1919, P. L. 1045.	Division of Dispensaries and Sanatoria. Division of Nursing.

Subject.	Pertains to Activities of.
65. Concerning reorganization of Dept. of Agriculture, creating Bureaus of Food, Chemistry, Markets, Animal Industry, etc., therein. Act of May 8, 1919, P. L. 141.	Administration, Central Office.
66. Defining and prohibiting pandering. Sections 1-5, Act of June 7, 911, P. L. 698.	Child Health and Genito-Urinary Divisions.
67. Concerning dependent, neglected, incorrigible and delinquent children. Act of June 15, 1911, P. L. 959.	Child Health and Genito-Urinary Divisions.
68. Licensing and control of midwives and practice of midwifery. Act of June 5, 1913, P. L. 441.	Child Health and Division of Medical Inspection.
69. Release on probation of certain convicts, adults and children. Act of June 19, 1911, P. L. 1055.	Child Health Division.
70. Concerning Mothers Assistance Fund and administration. Act of July 10, 1919, P. L. 893.	Child Health and Nursing Divisions.
71. Concerning children attending moving picture theatres during certain hours. Act of July 8, 1919, P. L. 777.	Child Health and School Health Divisions.
72. Lodgment of Prisoners about to become mothers. Act of May 8, 1913, P. L. 166.	Child Health and Nursing Divisions.
73. Child Labor. Act of April 29, 1909, P. L. 283. Act of June 9, 1911, P. L. 832. Act of April 15, 1913, P. L. 69. Act of July 19, 1913, P. L. 862.	Child Health and Nursing Divisions.
74. Concerning employment of females, as to hours of labor, holidays, sanitary conditions, etc. Act of June 1, 1915, P. L. 709.	Child Health and Nursing Divisions.
75. Regulating practice of pharmacy and sale of poisons. Act of May 17, 1917, P. L. 208.	Bureau of Drug Control.
76. Adulterated or misbranded drugs. Act of June 7, 1917, P. L. 564.	Bureau of Drug Control.
77. Concerning Juvenile Courts, children under 16 years of age; houses of refuge, detention houses, industrial schools, etc. Act of April 23, 1903, P. L. 274. Act of April 1, 1909, P. L. 89. Act of April 22, 1909, P. L. 119. Act of June 1, 1911, P. L. 543. Act of June 15, 1911, P. L. 959. Act of July 25, 1913, P. L. 1039. Act of May 13, 1915, P. L. 304. Act of June 12, 1919, P. L. 445. Act of March 26, 1903, P. L. 66. Act of June 12, 1893, P. L. 459. Act of July 2, 1901, P. L. 601. Act of July 31, 1913, P. L. 870. Act of March 27, 1903, P. L. 83. Act of April 15, 1903, P. L. 208.	Child Health Division.
78. Maintenance of children, etc., in private homes; outside of State; by county; on parole. Act of May 31, 1907, P. L. 331. Act of June 7, 1911, P. L. 676. Act of May 8, 1913, P. L. 177. Act of April 22, 1909, P. L. 113.	Child Health Division.

Subject.	Pertains to Activities of Child Health Division.
79. Children not to be detained in almshouses. Act of June 13, 1883, P. L. 111. Committment of children to charitable so- cieties. Act of May 11, 1911, P. L. 270.	
80. Support of Children born out of wedlock. Act of July 21, 1919, P. L. 773.	Child Health Division.

(There are a large number of unlisted laws concerning children which do not di-
rectly pertain to health.)

MODEL HEALTH ORDINANCES.

The attached drafts of health ordinances have been prepared by the State Department of Health as general suggestions for Pennsylvania municipalities.

Local officials should carefully study each draft and determine its applicability to local conditions.

Any changes made to meet local requirements should receive the approval of the local law officer before enactment of the ordinance; the suggested drafts have been approved by the Attorney General of the Commonwealth as to legal form and compliance with requirements of the constitution.

The State Department of Health will be pleased to furnish additional information or advice, if requested by the local authorities.

Model Smoke Ordinance.

Model Housing Ordinance.

Model Plumbing Ordinance.

Methods of Securing Borough Legislation.

Model Eating Place and Drinking Place Ordinance.

Model Garbage Ordinance.

Model Milk Ordinance.

Model Nuisance Ordinance.

MODEL SMOKE ORDINANCE

The Act of Assembly approved June 6, 1911, enables cities of the second class to regulate emission of smoke, and the Act of Assembly approved June 27, 1913, as amended by Act of Assembly May 27, 1919, enables third class cities to regulate the emission of smoke, except that emitted from railroad locomotives.

The following model smoke ordinance has been prepared by the State Department of Health as a general suggestion for Pennsylvania municipalities.

Local officials should carefully study the draft and determine its applicability to local conditions.

Any changes made to meet local requirements should receive the approval of the local law officer before enactment of the ordinance; for the suggested draft has been approved by the Attorney General of the Commonwealth as to legal form and compliance with requirements of the constitution.

The State Department of Health will be pleased to furnish additional information or advice, if requested by the local authorities.

AN ORDINANCE

defining dense smoke, fuel combustion apparatus, etc.; creating the office of smoke inspector, defining his duties; providing regulations for emission of smoke, approval of plans of fuel combustion apparatus and issuance of permits therefor; providing for penalties for violations and repealing inconsistent ordinances.

ARTICLE I.

Definitions.

Section 1. Be it ordained by the Council of of Pennsylvania, and it is hereby ordained by authority of the same; That for the purpose of this ordinance the words "dense smoke" shall be considered to mean smoke of sixty (60) per centum or greater density as determined by the "Ringelmann" chart as published and used by the Federal Bureau of Mines. Sixty (60) per centum density corresponds to number three (3) of the said Ringelmann chart.

Section 2. For the purpose of this ordinance the words "Fuel Combustion Apparatus" shall be considered to mean any apparatus or appliance which is used or may be used for the combustion of fuel in any manufacturing, light, heat or power plant; school house, public building, office building, church or business place; hotel, apartment or tenement house; theatre or amusement place, steam boat, steam roller, steam derrick, stationary or traction engine; tar, pitch or asphalt kettle or similar places or devices; provided however, that locomotives and fuel combustion apparatus in buildings used for private residence purposes shall be exempt from the provisions of this ordinance.

Section 3. For the purpose of this ordinance the words "responsible operator" shall be considered to mean any person, firm or corporation who as owner, lessee or operator is responsible for the operation and maintenance of any fuel combustion apparatus as aforesaid.

ARTICLE II.

Smoke Inspector.

Section 1. NOTE: In this section councils should authorize the appointment of a smoke inspector together with such assistants as may be deemed necessary to carry out the provisions of this ordinance also provide funds for salary and expenses.

The smoke inspector shall be a mechanical engineer qualified by technical training and practical experience in the theory and practice pertaining to the construction and operation of steam boilers and furnaces.

ARTICLE III.

Duties of Smoke Inspector

Section 1. It shall be the duty of the smoke inspector:

- (a) To make observations of the density of smoke emitted from fuel combustion apparatus.
- (b) To send written notice of any violation of this ordinance to the responsible operator of any fuel combustion apparatus.
- (c) To approve satisfactory plans and specifications for new installations of fuel combustion apparatus or for alterations and extensions to existing fuel combustion apparatus.
- (d) To issue permits for new installations, alterations or extensions for fuel combustion apparatus.
- (e) To inspect work done under approved plans and specifications and permits.
- (f) Upon request to advise responsible operators as to methods of operation of fuel combustion apparatus in order to minimize the density of smoke.
- (g) Institute prosecution for violation of the requirements of this ordinance.

ARTICLE IV.

Regulations.

Section 1. No responsible operator shall permit the emission of dense smoke from any fuel combustion apparatus for any period or periods of time aggregating two (2) minutes in a period of fifteen (15) minutes; provided, that in the case of stationary plants during the period of re-building a fire, dense smoke may be permitted for a period not exceeding twenty (20) consecutive minutes during any one day; and further provided that for and during the six months

following the approval of this ordinance the above requirements shall be modified so that dense smoke may be permitted for two and one-half (2½) minutes instead of two (2) minutes as aforesaid.

Section 2. The aforesaid notice of the smoke inspector for the abatement of dense smoke shall be served by him upon the responsible owner of the fuel combustion apparatus from which the smoke is emitted and the said notice shall require the abatement of the dense smoke within a period not to exceed 10 days; provided however, that when, in the judgment of the smoke inspector the said abatement necessitates substantial alteration of the fuel combustion apparatus or the installation of new equipment, the period of time for abatement may be extended to six months.

Section 3. No responsible owner shall construct, install, reconstruct, extend, alter or repair any fuel combustion apparatus prior to obtaining a permit from the smoke inspector.

Plans or specifications or both for such work shall be submitted to the smoke inspector together with an application in writing on a form furnished by the smoke inspector and signed by the responsible owner of the fuel combustion apparatus. If the said plans and specifications are approved by the smoke inspector a permit shall be issued by him to the responsible operator in which he shall set forth conditions and stipulations under which the said fuel combustion apparatus may be operated; provided however, that minor or emergency repairs which do not increase the capacity of the fuel combustion apparatus or which do not involve any substantial alterations therein or do not involve any alteration in the method or efficiency of smoke prevention may be made without the said application and issuance of the permit.

Section 4. A fee of one dollar (\$1.00) shall be paid to the..... treasurer for the inspection of the plans and specifications and must be paid prior to the issuance of the permit.

Section 5. All construction, reconstruction, alterations, repairs and operation of fuel combustion apparatus shall be conducted by the responsible owner in strict conformity with the conditions and stipulations of the aforesaid permit and to the satisfaction of the smoke inspector.

And if said work or operation is not carried on in conformity with the terms of the permit, the smoke inspector shall have the power and authority to revoke the said permit by giving notice in writing to the responsible owner to that effect and further work or operation thereafter shall be considered a violation of the provisions of this ordinance.

Section 6. Approval of plans and specifications and issuance of permit by the smoke inspector or advice or assistance from him shall not be held to exempt any responsible owner to whom a permit has been issued or who has acted upon such advice or received such assistance, from prosecution on account of violations of any of the provisions of this ordinance.

Section 7. Any person or persons who shall obstruct or hinder the smoke inspector or his duly appointed assistants in the performance of his or their duties shall be deemed guilty of a violation of the provisions of this ordinance.

ARTICLE V.**Penalties.**

Section 1. Any person, firm or corporation or any responsible operator of fuel combustion apparatus violating any of the provisions of this ordinance shall upon conviction thereof by any justice of the peace, alderman or magistrate be sentenced to pay a fine of not more than one hundred dollars (\$100.00) and costs. In default in the payment of any fine the defendant shall be sentenced to jail for a period of not exceeding.....

MODEL HOUSING ORDINANCE

The Act of Assembly approved July 24, 1913 (P. L. 1015), created a Bureau of Housing for the State's control over housing conditions.

The following model housing ordinance, based upon the principles in this Act, was prepared by the State Department of Health as a general suggestion for Pennsylvania municipalities.

Local officials should carefully study the draft and determine its applicability to local conditions.

Any changes made to meet local requirements should receive the approval of the local law officer before enactment of the ordinance: for the suggested draft has been approved by the Attorney General of the Commonwealth as to legal form and compliance with requirements of the constitution.

The State Department of Health will be pleased to furnish additional information or advice, if requested by the local authorities.

AN ORDINANCE

defining lodging, rooming, boarding and tenement houses, stating that the sanitary requirements for occupancy, providing for the investigation, service of notice and abatement of insanitary housing conditions and overcrowding, and providing penalties for violation thereof.

Section 1. The Council of Pennsylvania, does hereby enact an ordinance regulating housing conditions within the of as specified herein.

Section 2. It shall be the duty of the Board of Health to investigate the sanitary conditions of tenement, rooming, lodging and boarding houses, and when the same are found not to be in conformity with the requirements of this ordinance, or in the opinion of the Board of Health to be a menace to those occupying the same, or employed therein, or to be overcrowded, to condemn the same and to notify the owners or agents thereof in writing, setting forth the non-compliance with requirements of this ordinance, or the insanitary or overcrowded conditions thereof and specifying in writing the changes or alterations which shall be made thereto for the purpose of relieving such conditions and further specifying the time within which such changes or alterations shall be completed or overcrowding relieved.

Section 3. For the purpose of this ordinance, the several classes of buildings referred to herein are defined as follows:

(a) A lodging house shall mean any building or portion thereof in which five or more persons are furnished with sleeping accommodations for a single night either for hire or for charity.

(b) A rooming house shall mean any building or barrack or portion thereof in which persons are received, housed or lodged either for hire or for charity.

(c) A boarding house shall mean any building or portion thereof in which persons are received, housed, lodged or furnished with meals for hire.

(d) A tenement shall mean any building or portion of a building or block of buildings which is occupied by two or more families who have a common right in the halls, stairways, cellars, yard and plumbing, or any one of them. Tenements shall include apartment houses, apartment hotels, flats, two and three family houses, and any building not otherwise described which is used for multiple habitation where any portion thereof is used in common.

Section 4. All buildings of the classes specified herein located on or adjacent to a highway in which a public water main is laid shall have the public water supply so distributed through the building as to furnish an adequate quantity of wholesome water, with reasonable facilities for drinking and washing purposes for the occupants thereof; provided, that in tenements each family shall be furnished with a water supply for their separate use.

All buildings of the classes specified herein so located that a public water supply is not accessible, shall be furnished with an approved private water supply distributed in an approved manner.

Section 5. All buildings of the classes specified herein located on or adjacent to a highway in which a public sewer is laid, shall have the drainage system of the building connected thereto, and there shall be furnished adequate and sanitary toilet facilities for separate use of each family.

All buildings of the classes specified herein so located that a public sewer is not accessible, shall be furnished with a substantial and sanitary type of cesspool, privy or other device, constructed, installed and maintained in an approved manner; provided, that in tenements each family shall have separate toilet facilities.

Section 6. All rooms used for sleeping purposes in buildings of the classes specified herein shall have at least 600 cubic feet of air space or 70 square feet of floor area for each occupant of said room; provided, that no cellar, basement, lower story or any portion of a building of which one-half of the height from the floor to the ceiling is below the level of the ground adjoining, shall be used for sleeping purposes.

Section 7. All buildings of the classes specified herein shall be so located that reasonable open space or spaces furnishes natural light and air to the windows of each room in said buildings. Each room in said building used for living or sleeping purposes shall have a window or windows opening directly to the outside and furnished with sash so constructed and maintained that they may be easily opened to provide ample ventilation. Said windows shall be proportioned, as follows:

Minimum Area of Windows

Number of Persons Occupying Room	Window Area in Square Feet per Capita	
	When Window is in One Wall	When Windows are in Opposite Walls
1 -----	10	8
2 -----	9	7.0
3 -----	8	6.5
4 or more, -----	7	6.0

Section 8. Any building of the classes specified herein or any portion thereof shall not be occupied if it is in such condition, that in the judgment of the Board of Health sanitary methods of living cannot be maintained. If the Board of Health deems it necessary in the interest of the public health they shall notify in writing the owner or agent of any such building describing the insanitary conditions that exist therein requiring the same to be abated within a specified time and that after the expiration of the time specified the premises shall not be occupied unless they be placed in an approved sanitary condition.

If at the expiration of the time given in the said notice its requirements have not been complied with the said building shall be vacated and the Board of Health shall post a sign or placard upon the property in a conspicuous place, stating that the building or any part of it, or the premises, as the case may be, is in an insanitary condition and shall not be occupied.

Section 9. Whenever notice is given under the provisions of this ordinance, the same shall be served upon the person required to make such correction, or his agent, by the duly authorized agent of the Board of Health, or by mailing a copy of the said notice to the last known address of such person or his agent, and by posting a copy of this notice in a conspicuous place upon the premises affected. The notice and placard or sign stipulated in Section 8 hereof, shall not be removed or defaced until its removal is authorized in writing by the Board of Health.

Section 10. Any person, firm or corporation who shall violate any of the provisions of this ordinance shall upon conviction before any justice of the peace, alderman or magistrate, be fined not less than five (5) dollars per day or more than twenty-five (25) dollars per day, for each day during which the premises have been used after the expiration of the time specified in the aforesaid notice of the Board of Health and also the cost of prosecution.

Section 11. In case any violation of this ordinance also constitutes a violation of an Act of Assembly of Pennsylvania for which a penalty is provided by law, with which penalty the penalty provided by this ordinance may be inconsistent, in such case the penalty provided by the Act of Assembly shall take precedence and shall be the penalty imposed for such violation.

Section 12. Whenever in this ordinance the words "accessible, approved, reasonable, available," or words of like import are used, it shall be understood that the accessibility, approval, reasonableness or availability, shall be determined by the Board of Health.

Section 13. All ordinances or parts of ordinances inconsistent herewith are hereby repealed.

APPENDIX

Housing improvements are primarily directed to the structural features of the building, however it must be borne in mind that other factors enter into the problem and it may be advisable to add sections to the ordinance covering the following points:

(a) That no buildings of the classes specified herein shall be constructed on the rear end of a lot or in conjunction with other buildings unless the said building shall have a full frontage upon a public street and be so located that the said building shall not cut off or interfere with the light and air of any building on the same lot.

(b) That no tenement house or lodging house hereafter erected may be occupied where a public sewer is not accessible or where the public street is not sewered, graded and open to public travel.

It must further be borne in mind that the cleanliness of the building and its environments are essential to wholesome living conditions, for example:

(c) In tenement houses the owner should be held responsible for the maintenance of the common halls, stairways, cellar, yard, etc., in a cleanly condition.

(d) The accumulation of rubbish, ashes, garbage or organic wastes on the premises of tenement houses shall not be permitted.

(e) The grounds of tenement houses and lodging houses shall be either paved or graded and drained so that water will not be retained.

These items (c) (d) (e) may be controlled by adding proper sections to this ordinance or by considering such conditions as public nuisances and the Board of Health abating them as such.

MODEL PLUMBING ORDINANCE

A plumbing code for second class cities was established by the Act of Assembly approved June 7, 1901, P. L. 493, and amended by the Act of May 14, 1909, P. L. 840.

The Acts of May 21, 1913, P. L. 276, and June 12, 1913, P. L. 476, further amended the original Act of 1901, and extended the applicability of the plumbing code to third class cities.

The following model plumbing ordinance, based upon the State Code for second and third class cities, was prepared by the State Department of Health as a general suggestion for boroughs and first class townships in Pennsylvania.

Local officials should carefully study the draft and determine its applicability to local conditions.

Any changes made to meet local requirements should receive the approval of the local law officer before enactment of the ordinance; for the suggested draft has been approved by the Attorney General of the Commonwealth as to legal form and compliance with requirements of the constitution.

The State Department of Health will be pleased to furnish additional information and advice, if requested by the local authorities.

PLUMBING CODE

FOR

BOROUGHES AND FIRST CLASS TOWNSHIPS

ARTICLE I

Examination
Licensure
Registration

ARTICLE II

Plumbing and
House Drainage

ARTICLE III

Cesspools
Privy Vaults

ARTICLE IV—General

Definitions
Inspection
Tests
Adjustment of Disputes
Enforcement
Penalties
Repealing

AN ORDINANCE

Providing for the examination, licensure and registration of persons, firms or corporations engaged or engaging in the business or work of plumbing or house drainage; prescribing rules, regulations and requirements for the construction, location and maintenance of plumbing, house drainage, cesspools or privy vaults in the _____ of _____; providing for the inspection, testing and approval of said plumbing or house drainage by the Board of Health; authorizing the appointment of a plumbing inspector, defining his duties, and defining terms used; providing for the enforcement of this ordinance, and penalties for violations thereof and repealing inconsistent ordinances.

ARTICLE I

Section 1. The Council of the _____, Pennsylvania, does hereby enact an ordinance conferring upon the Board of Health certain powers and duties regulating the business or work of plumbing or house drainage, as follows:

Certificate or License

Section 2. That it shall not be lawful for any person or persons, firm or corporation, to carry on or work at the business of plumbing or house drainage in _____, until a license to engage in or work at said business shall have been granted said person or persons by the Board of Health; and the Board of Health shall register such licenses in a book kept for the purpose, which register shall be open to public inspection.

Applications

Section 3. Each person or firm engaged or engaging in the business or work of plumbing and house drainage in the _____ shall apply in writing to the said Board of Health for a license; and if, after proper examination made by the Board of Examiners such person or persons so applying shall be found competent, the same shall be certified to the Board of Health and the Board shall thereupon issue either a Master Plumber or Journeyman Plumber license to such person or persons, which shall be for the period of one calendar year or fractional part thereof next ensuing the date of such examination and entitle him or them to engage in or work at the business of plumbing and house drainage.

Board of Examiners

Section 4. The Board of Health shall appoint a Board of Examiners to consist of the Health Officer, Plumbing Inspector and two competent plumbers in no way connected with the local government, who shall examine all applicants for license under the provisions of these rules. The Examining Board shall make all reasonable rules and regulations governing such examinations, which shall be approved by the said Board of Health.

Examinations and Fees

Section 5. An examination of any one member of a firm or corporation, or of the superintendent or foreman therefor, shall be deemed sufficient. Said person, firm or corporation, engaged or engaging in the business of plumbing or house drainage, shall pay for each examination the sum of five dollars, and each journeyman shall pay the sum of fifty cents, which sum shall be paid into the _____ treasury for the use of the _____. The Board of Health of the said _____ is hereby authorized to pay to the plumbers acting on said board the sum of five dollars per day for each day or session thus actually employed.

Section 6. The Board of Health is hereby authorized and required to appoint a competent person as plumbing inspector whose duty it shall be to supervise, superintend, and inspect all plumbing and house drainage in conformity with the provisions of this ordinance. The said Plumbing Inspector shall receive a salary of _____ annually.

Place of Business and Public Sign

Section 7. Every registered master plumber shall have a bona fide place of business in the _____; and shall display on the front of his place of business a sign "Registered Plumber," bearing the name or names of the person, firm or corporation, in letters not less than three inches high.

Registration

Section 8. No person other than a registered master plumber shall be allowed to carry or engage in the business; nor shall any person or persons expose the sign of plumbing or house drainage, or any advertisement pertaining thereto, unless

he or they have first secured a license and been registered in the office of the Board of Health; nor shall any person or persons other than a registered plumber, be allowed to alter, repair, or make any connection with, any drain, soil, waste, or vent-pipe or any pipe connected therewith; unless each person so employed shall be registered.

A registered plumber may be employed for the care, alteration or addition to the plumbing and drainage system of a designated industrial or mercantile establishment, institution, hotel, hospital, college, asylum, etc., where it is necessary to have the continual services of a registered plumber and he shall receive a license, after due examination, for such service and need not have a place of business as provided for in Section 7; but in no case shall said plumber be permitted to do any plumbing or drainage except that for which he is registered.

Notice of Change in Place of Business

Section 9. Every registered master plumber, firm or corporation shall give immediate notice of any change in his or their place of business; and upon his or their retirement from business shall surrender his or their license to the Board of Health. Every person, firm, corporation, or representative thereof, in registering, shall give the full name or names of the person, firm or officers' names of the corporation, for which he or they shall register.

Expiration of Licenses, etc.

Section 10. At the expiration of each calendar year said license shall be null and void. A licensed master or journeyman plumber desiring to continue in, or work at, the business of plumbing and house drainage for the ensuing year shall, between the first and thirty-first days of December of each and every year surrender the said license for the current year to the Board of Health, and re-register his or their name or names, and the business or home address, upon such form or forms as may, from time to time, be furnished by said Board of Health.

Re-registration; Fees; Register

Section 11. A re-examination will not be necessary for re-registration, unless the licensed master or journeyman plumber shall have failed to make application for re-registration at the specified time. The sum of one dollar shall be paid by master plumbers, firms, or corporations, and the sum of twenty-five cents by journeyman plumbers, for re-registration, which sum shall be paid into the _____ treasury for the use of the _____.

Plumbers from other Towns

Section 12. Any person, firm, or corporation, holding a license, or certificate, granted by the Bureau or Board of Health of any first, second or third class city, borough or first-class township, in this Commonwealth, to engage in or work at the business of plumbing and house drainage, desiring to do plumbing and drainage work in the _____ shall, without examination, be registered before entering upon such work; PROVIDED, HOWEVER, That such registration shall be restricted and limited to such plumbing and drainage work as he or they shall have contracted for at the time of registry. On the completion of such contract or contracts the registration of such person, firm or corporation shall be null and void. and no further permit shall be issued to such person, firm or corporation until he or they shall have first registered his or their names and address, as hereinbefore provided.

ARTICLE II

Section 1. The construction of plumbing, house drainage and cesspools shall be conducted only under and in accordance with the following rules, regulations and requirements.

Plans and Specifications

Section 2. There shall be a separate plan for each building, public or private, or any addition thereto, or alterations thereof, accompanied by specifications showing the location, size and kind of pipe, traps, closets and fixtures to be used, which plans and specifications shall be filed with the Board of Health. The said plans and specifications shall be furnished by the architect, engineer, plumber or owner. and filed by the plumber. All applications for change in plans must be made in writing.

Filing Plans and Specifications

Section 3. Plumbers before commencing the construction of plumbing work in any building, except in case of repairs, which are here defined to relate to the mending of leaks in soil, vent or waste pipes, faucets, valves and water supply pipes, and shall not be construed to admit of the replacing of any fixtures, such as water-closets, bath-tubs, wash-stands, sinks, etc., or the respective traps for

such fixtures, shall submit to the Board of Health plans and specifications, legibly drawn in ink, on blanks to be furnished by said board. Where two or more buildings are located together and on the same street, and the plumbing work is identical in each, one plan will be sufficient. Plans will be approved or rejected within twenty-four hours after their receipt, when practicable.

Duty of Owners and Plumbers in Constructing Drains, etc.

Section 4. It shall be the duty of every person constructing or owning any drain, soil-pipe, passage or connection between a sewer and any ground, building, erection or place of business, and in like manner the duty of the owners of all grounds, buildings, erections, and of all parties interested therein or thereat, to cause and require that such drain, soil-pipe, passage or connection shall be adequate for its purpose, and shall at all times allow to pass freely all material that enters or should enter the same; and no change of drainage, sewerage or the sewer connections of any house shall be permitted, unless notice thereof shall have been given to the Board of Health and assent thereto obtained in writing.

Inspection and Approval

Section 5. Drainage, sewerage or plumbing work must not be covered or concealed in any manner until after it is inspected and approved by the Board of Health. Notice must be given said board, upon blanks to be furnished by it, when the work is sufficiently advanced for such inspection; when it shall be the duty of the proper officers to inspect the same within three days after the receipt of said notice.

House Drains

Section 6. The entire drainage system of every house or building shall be separately and independently connected with the street sewer, where such sewer exists, except where two houses are built together on a lot with a frontage of thirty feet or less, when one connection with main sewer will be allowed; but there shall be a separate house drain for each house, connected by a "Y" connection in the front of such house, at the property line, with main house sewer; or, where one building exists or is erected in the rear of another, on an interior lot, of single ownership, and no private sewer is available, or can be made for the rear building through an adjoining alley, courtyard or driveway, the house drain from the front building may be extended to the rear building, and the whole will be considered as one house drain. Where it is necessary to construct a private sewer to connect with sewer on adjacent street, such plans may be used as may be approved by the Board of Health, but in no case shall joint drains be laid in cellars, parallel with the street or alley.

House drains or soil pipes, laid beneath floor, must be plain cast iron soil pipe (as per table in Section 15) with leaded and caulked joints, and carried five feet outside cellar wall. All drain or soil pipes connected with main drain shall be of plain cast iron soil pipe, with leaded and caulked joints, or of heavy wrought iron or steel pipe with gas tight screw joints properly secured, and carried five feet outside cellar wall. All arrangements of soil or waste pipes shall be as direct as possible. Changes of direction on pipes shall be made with "Y" branches, both above and below the ground. Where a pipe passes through a new foundation wall a relieving arch shall be built over it, with a two-inch space above and on either side of the pipe.

The size of the main house drain shall be determined by the total area of the buildings and paved surfaces to be drained and shall not be less than given in the following table, if iron pipe is used. If the pipe is terra cotta, the diameter shall be one size larger for the equivalent area drained.

Diameter	Fall $\frac{1}{4}$ Inch per Foot
4 inches,	1,800 square feet drainage area
5 inches,	3,000 square feet drainage area
6 inches,	5,000 square feet drainage area
8 inches,	9,100 square feet drainage area
10 inches,	14,000 square feet drainage area

Diameter	Fall $\frac{1}{4}$ Inch per Foot
4 inches,	2,500 square feet drainage area
5 inches,	4,500 square feet drainage area
6 inches,	7,500 square feet drainage area
8 inches,	13,600 square feet drainage area
10 inches,	20,000 square feet drainage area

The main house drain must extend through building and run at least two feet above roof as the main soil or vent stack; it may be decreased in diameter beyond or above a rainwater conductor or surface inlet by permission of the Board of Health, when conditions are such as to warrant in their opinion such decrease; in no case shall the main house drain or soil or vent stack be less than four (4) inches in diameter.

Supports for Soil Lines

Section 7. All soil lines located above cellar floor must be adequately supported in an approved manner by the use of substantial iron hangers or straps, or masonry, brick or concrete piers, at intervals not greater than seven feet. Each soil or vent stack shall be so supported at its base by stone, brick or concrete piers that the weight of said stack shall not bear directly upon the "Y" branch.

Location of Main Trap

Section 8. The house drain may be provided with a horizontal trap which may be placed immediately inside the cellar wall, or at the curb line. The house drain for convenience in cleaning must be provided with a hand-hole, inside the cellar wall the cover of which must be properly fitted and made gas and air-tight, with heavy brass screw-cap ferrule, caulked in. The trap and the clean-out shall be subject to the approval of the Board of Health.

Fresh Air Inlet

Section 9. If a house trap is provided in the house drain, a fresh air inlet must be connected with the house drain, just outside of and above the house trap. Where underground, it must be of heavy cast iron. Said inlet must lead to the outer air, at a point outside the front wall of building, as approved by the Board of Health. The fresh air inlet must be of the same size as the drain, up to four inches. For five and six inch drains it must not be less than four inches in diameter, for seven and eight inch drains, not less than six inches in diameter, or its equivalent.

Laying of House Sewers and Drains

Section 10. Where possible, house sewers and house drains must be given an even grade to the main sewer of not less than one quarter of an inch per foot.

Location of House Sewer

Section 11. When main sewer is not located on a street, house sewers must be constructed on outside of buildings, and branch into each house separately, and in no case will the sewer from one house to another be permitted to run through cellars.

Terra Cotta Drains Outside of Buildings

Section 12. Where the ground is of sufficient solidity for a proper foundation, cylindrical terra cotta pipe of the best quality, free from flaws, splits or cracks, perfectly burned and well glazed over the entire inner and outer surfaces, may be used, if laid on a smooth bottom, with a special groove cut in the bottom of the trench for each hub, in order to give the pipe a solid bearing on its entire length, and the soil well rammed on each side of the pipe. The spigot and hub ends shall be closely connected, and the space between the hub and pipe must be thoroughly filled with cement mortar, made of one part of the best American Portland Cement and two parts bar sand, thoroughly mixed dry, and enough water afterwards added to give proper consistency. The mortar must be mixed in small quantities, and used as soon as made. The joints must be carefully wiped out and pointed, and all mortar that may be left inside removed, and the pipe left clean and smooth throughout, for which purpose a swab may be used. Terra cotta pipe must not be laid closer than five feet to any exterior wall of a building, or less than three and one-half feet below the surface of the ground, or when the sewer passes within five feet of a well, nor in made or filled in ground.

Bituminous Pipe Joints

Section 13. Where there is a discharge of industrial wastes with a high acid content, the drainage must be through salt glazed terra cotta pipes, as previously specified: provided that hubs must be extra wide and deep, and joints run with a bituminous compound having a fusing point at a temperature of not less than 175 degrees Fahrenheit. The joint shall be at least 1½ inches deep over oakum, jute or hemp.

This section shall not be taken as permitting connections from soil lines to terra cotta lines carrying acid wastes.

Materials of Sewers between Buildings

Section 14. Where a sewer is laid between buildings, in a passageway, alley or courtyard, at a less distance than five feet from the buildings, it must be constructed of plain cast iron soil pipe, for a distance corresponding to the length of the foundation walls of said buildings.

Weight and Thickness of Cast Iron Soil Pipe

Section 15. All cast iron soil pipes and fittings must be tested to fifty pounds water pressure, must be sound and smooth, free from cracks and sand holes, of a uniform thickness, of full interior diameter, as specified and conform to the following weights:

Two inch pipe, five and one-half pounds per linear foot.

Three inch pipe, five and one-half pounds per linear foot.

Four inch pipe, thirteen pounds per linear foot.

Five inch pipe, seventeen pounds per linear foot.

Six inch pipe, twenty pounds per linear foot.

Seven inch pipe, twenty-seven pounds per linear foot.

Eight inch pipe, thirty-three and one-half pounds per linear foot.

Ten inch pipe, forty-five pounds per linear foot.

Twelve inch pipe, fifty-four pounds per linear foot.

No cast iron soil pipe, drain, waste or vent pipe shall be tarred or coated, until after inspection by the Plumbing Inspector and after test shall be applied to the plumbing system and approved. All cast iron soil pipe and fittings shall have the name of the manufacturer, size and class or weight per foot cast on the exterior surface of each length of pipe.

Wrought Iron or Steel Pipes and Fittings

Section 16. All wrought iron and steel pipes must be of best quality, galvanized, properly tested and guaranteed by the manufacturer. All pipe two inches or more in diameter must be lap welded. Each length of pipe must have the maker's name stamped upon it. All joints are to be screw joints made with red lead, or other substance, approved by the Board of Health and the burr formed in cutting the thread must be carefully reamed out.

Fittings for wrought iron or steel waste or soil pipes shall be special heavy cast iron with recessed threaded drainage fittings. The threads shall be tapped carefully so as to give a uniform grade of at least $\frac{1}{8}$ inch per foot to branches. Fittings for vent pipes of wrought iron or steel may be standard cast or malleable steam or water pipe fittings. All fittings must be galvanized and have smooth interior waterways.

Lead Waste Pipes

Section 17. Lead waste pipes may be used for short branches on horizontal lines, and for vent connections, two (2) inches or less in diameter. Lead waste pipes shall have not less than the following weights:

Diameter	Weight per Foot
1 inch,	2 lbs. 0 ozs.
1 $\frac{1}{2}$ inches,	2 lbs. 8 ozs.
1 $\frac{3}{4}$ inches,	3 lbs. 8 ozs.
2 inches,	4 lbs. 0 ozs.

Subsoil Drains

Section 18. Subsoil drains must discharge into a sump or receiving tank, the contents of which are to be lifted and discharged into the drainage system above the cellar floor by some approved method. Where directly sewer connected, they must be cut off from the rest of the plumbing system by a brass flap-valve on the inlet to the catch basin, and the trap on the drain from the catch basin must be supplied with water as required for floor drains.

Yard and Area Drains

Section 19. All yards, areas and courts must be drained. Where a municipal storm water conduit or combined sewer is accessible the yard, areas and courts of tenement houses, lodging houses and hotels must be drained into such conduit or sewer. These drains, when sewer connected, must be not less than four inches in diameter. They should be controlled by one-trap, if possible.

Floor Drains.

Section 20. Floor or other drains will only be permitted when it can be shown, to the satisfaction of the Board of Health that their use is absolutely necessary, and arrangements made to maintain a permanent water-seal in the traps, and be provided with check or back-water valves.

Use of Old House Drains and Sewers

Section 21. Old house drains and sewers may be used, in connection with new buildings, or new plumbing, only when they are found, on examination by the Board of Health, to conform in all respects to the requirements governing new sewers and drains.

Leader Pipes

Section 22. All buildings shall be kept provided with proper metallic leaders, for conducting water from the roofs in such manner as shall protect the walls and foundations of said buildings from injury. In no case shall the water from said leaders be allowed to flow upon the sidewalk, but shall be conducted by a pipe or pipes to the sewer. If there be no sewer in the street upon which such buildings front, then the water from said leaders shall be conducted, by proper pipe or pipes below the surface of the side-walk, to the street gutter. When there is a separate sanitary sewer system, there shall be no connections made to discharge into said sewer system, any rain water or other unpolluted water, such as from roof water leaders, surface water yard-drains or floor-drains of any kind which do not receive polluting material.

Material for Inside and Outside Leaders

Section 23. Inside leaders must be constructed of cast iron with leaded joints or wrought iron or steel with screw joints, with roof connections made gas and water-tight by means of heavy copper drawn tubing slipped into the pipe. The tubing must extend at least seven (7) inches into iron leader pipe. Outside leaders may be of sheet metal, but they must connect with house drain by means of a cast iron pipe extending vertically five (5) feet above grade level, where the building is located along public driveways or sidewalks. Where the building is located off building line, and the drainage connection is not liable to be damaged, the connection shall be made with iron pipe extending at least one foot above grade level.

Trapping and use of Leaders

Section 24. All leaders must be trapped with cast iron running traps, so placed as to prevent freezing. Rain water leaders must not be used as soil waste, or vent pipes, nor shall such pipes be used as a leader. Yard and area drains should be trapped by the main leader trap where possible.

Diameter of Soil Pipes

Section 25. The smallest diameter of any soil pipe permitted to be used shall be four inches. The size of soil pipe must be not less than set forth in the following tables:

Maximum Number of Fixtures Connected

Soil and Waste Combined		
Size of Pipe	Branch	Main
4 in.,	48 fixtures	96 fixtures
5 in.,	96 fixtures	192 fixtures
6 in.,	268 fixtures	336 fixtures

Soil Pipe Alone		
Size of Pipe	Branch	Main
4 in.,	8 water closets	16 water closets
5 in.,	16 water closets	32 water closets
6 in.,	34 water closets	68 water closets

Fixtures with—
One and one-quarter inch traps, count as one fixture.
One and one-half inch traps, count as one fixture.
Two inch traps, count as two fixtures.
Two and one-half inch traps, count as three fixtures.
Three inch traps (water closets), count as four fixtures.
Four inch traps, count as five fixtures.
If the building is six (6) or more and less than twelve (12) stories in height, the diameter shall be not less than five (5) inches; if more than twelve stories, it shall be not less than six inches in diameter. In a building six or more stories in height, with fixtures located below the sixth floor, soil pipe four (4) inches in diameter will be allowed to extend through the roof, provided the number of fixtures does not exceed the number given in the table.
All soil pipe must extend at least two feet above the roof and above the highest window, and must not be reduced in size. Traps will not be permitted on main, vertical, soil or waste lines. Each house must have a separate line of soil and vent pipes. No soil or waste line shall be constructed on the outside of a building.

Exhaust from Steam Pipes, etc.

Section 26. No steam exhaust, blow-off or drip pipe shall connect with a sewer or house drain, leader, soil pipe, waste or vent pipe. Such pipes must discharge into a condenser, from which an approved outlet to the sewer shall be made. Such condensers shall be water supplied, to hold condensation and protect the sewer, and shall be supplied with relief vent to carry off dry steam.

Waste Pipes from Filters, etc.

Section 27. Waste pipes from water filters, gas engines, soda water fountains, bars, air compressors and vacuum cleaners must discharge into an open properly trapped water supplied fixture when the sewer is accessible. In cases where the sewer is not accessible anti-syphon traps must be provided.

Gasoline Intercepting Pits or Tanks

Section 28. Buildings used for housing automobiles or where gasoline is used, stored or sold, must be provided with an approved intercepting pit or tank so constructed, located and maintained as to prevent the entrance of gasoline, oils or like inflammable fluids into the sewer. This pit or tank must be water-tight and be provided with an air inlet, a ventilating stack at least four inches in diameter extending two feet above highest point of roof and a manhole and cover.

Safe and Refrigerator Waste Pipes

Section 29. Waste pipes from safes and refrigerators must not connect directly with any part of the plumbing system. The said waste pipes must be as short as possible and may discharge either directly over a portable pan or be piped to discharge over an open properly trapped water supplied fixture. In tenement and lodging houses where refrigerators drain into separate waste pipes down to an open properly trapped water supplied fixture, the pipe lines must extend above the roof, and shall not be less than one and one-half inches in diameter.

The branches on vertical lines must be made by "Y" fittings, and carried to the safe with as much pitch as possible. Where there is an offset on a refrigerator waste pipe in cellar, there must be cleanouts to control the horizontal part of the pipe. Lead safes must be graded, and neatly turned over beveled strips at their edges.

Changes in Direction

Section 30. All sewer, soil and waste pipes must be as direct as possible. Changes in direction must be made with "Y" or half "Y" branches, or one-eighth bends. Offsets in soil or waste pipes will not be permitted when they can be avoided; nor in any case, unless suitable provision is made to prevent accumulation of rust or other obstruction. Offsets shall be made with forty-five degree bends, or similar fittings. The use of T-"Y" (sanitary T's) will be permitted on upright lines only.

Joints for Iron Soil and Lead Waste Pipes

Section 31. Joints in cast iron pipes must be filled with oakum and lead, and hand caulked so as to make them gas tight. Connections of lead and cast iron pipes must be made with brass sleeve or ferrule, of the same size as the lead pipe inserted in the hub of the iron pipe, and caulked with lead. The lead must be attached to the ferrule by wiped joint. Joints between lead and wrought iron pipes must be made with brass nipple, of same size as lead pipe. The lead pipe must be attached to the nipple by wiped joint. All connections of lead waste pipe must be made by means of wiped joints.

Traps for Fixtures

Section 32. Every sink, bath tub, basin, water closet, slophopper or fixture having a waste pipe, must be furnished with a trap, which shall be placed as close as practicable to the fixture that it serves. All traps must have a water seal of at least two and one-half inches in depth. Traps that depend upon interior partitions for the water seal, except earthenware ones are prohibited. All traps not revented must be of an approved anti-syphon type.

Section 33.

Size of Horizontal and Vertical Waste Pipe Traps and Branches		Number of small Fixtures
Horizontal and Vertical		
1½ inches,	1	
1¾ inches,	2	
2 inches,	3 to 8	
2½ inches,	9 to 20	
3 inches,	21 to 44	

If building is ten (10) or more stories in height, the vertical waste pipe shall not be less than three (3) inches in diameter.

The size of trap and waste branches for a given fixture shall be as follows:

Kind of Fixtures	Size in Inches	
	Trap	Branch
Water closet,	3	4
Slop sink with trap combined,	3	3
Slop sink ordinary,	2	2
Pedestal urinal,	3	3
Floor drain or wash,	4	4
Yard drain or catch basin,	4	4
Urinal trough,	2	2
Laundry trays (2 or 5),	2	2
Combination sink and tray (for each fixture),	1½	2
Kitchen sinks (small for dwellings,	1½	1½
Kitchen sinks (large) hotels, restaurants, grease trap, ..	..	2
Pantry sink,	1½	1½
Wash basin, one only,	1½	1½
Bath tubs 4x8 inches, drum trap, .....	..	1½
Shower baths,	1½	1½
Shower baths (floor),	2	2
Sitz baths,	1½	1½
Drinking fountains,	1½	1½

Overflow pipes from fixtures must, in all cases, be connected on the inlet side of traps.

Sediment Pipes

Section 34. Sediment pipes from kitchen boilers must not be connected with any drain, soil or waste pipe.

Setting of and Sizes of Traps

Section 35. All traps must be well supported and set true and level. The sizes for traps must not be less than those given below :

- Traps for water closets, four inches in diameter.
- Traps for slop sinks, one and one-half inches to three inches in diameter.
- Traps for kitchen sinks, one and one-half inches in diameter.
- Traps for wash trays, two inches in diameter; a set of wash trays may have only one trap.
- Traps for (bowl) urinals, one and one-half inches in diameter.
- Traps for washstands, one and one-fourth inches in diameter.

Bath tubs must have drum-traps, not less than four inches in diameter, with trap screws three inches in diameter on floor line. Bath tub waste pipes must not be connected to water closet traps. Waste from kitchens and laundries in hotels, restaurants, or other places discharging large quantities of greasy water must be through an approved grease trap.

Material for Vent Pipes

Section 36. All vent pipes must either be of lead, brass, cast iron or galvanized iron pipe.

Ventilation of Traps and Soil Lines

Section 37. Traps other than anti-syphon traps, must be protected from siphonage or air pressure by vent pipes of a size not less than given in the following tables :

Size of Pipe	Maximum Developed Length in Feet	Number of Traps Vented	
	Mains	Branch	Main Vent
1½" vent,	20	1	
1½" vent,	40	2 or less	
2 " vent,	65	10 or less	20 or less
2½" vent,	100	20 or less	40 or less
3 " vent,	10 or more stories	60 or less	100 or less

The branch vent pipes shall be not less than the following sizes :
One and one-fourth inches in diameter, for one and one-fourth inch traps.
One and one-half inches in diameter, for one and one-half inch to two and one-half inch traps
Two inches in diameter, for three inch to four inch traps.
One-half their diameter, for traps five inches and over.
In cases where there are two or more fixtures on a branch, the waste pipe shall be extended as a loop vent, instead of reventing each separate trap.
Where two (2) or more water closets are placed side by side on a horizontal branch, the branch line shall have a relief extended as loop vent. A pipe two (2) inches in diameter will be sufficient as a loop vent for two (2) closets. A pipe three (3) inches in diameter shall be used as a relief for three (3) or four (4) closets; and where more than four (4) closets are located on the same branch the relief will not be less than four (4) inches in diameter. In cases where an addi-

tional fixture is required and it is impossible to revent trap, an anti-syphon trap must be used. In cases where an additional closet is required within eight feet of a soil stack, no relief vent will be required for said closet; but where it is on a dead end more than eight feet from soil stack, a two inch relief vent line will be required. Relief vent pipes for water closets must not be less than two inches in diameter, for a length of forty feet, and not less than three inches in diameter, for more than forty feet.

New buildings having water closets located not more than eight feet from the main soil stack need not be revented, provided that other fixtures on the same branch are not more than twelve feet from said stack and have anti-syphon traps.

No revent from traps under bell-traps except for showers, will be required.

In any building having only a bell-trap on floor drainage connection with a sewer, a two inch relief vent line must be extended to at least two feet above the roof of building from rear end of main drain. House drains, constructed for roof drainage only, will not require a relief vent.

Trapped vent pipes are strictly prohibited. Vent pipes must not connect the house side of any trap with any sewer, soil or waste pipe. When vent pipes must be located in the basement or cellar floor, they shall be provided with removable strainers or cleanouts.

Back vent pipes, from traps above the floor, must either be connected with crown of trap with ground-in brass couplings, or, if connected solidly to traps, must have a ground-in brass coupling at wall.

Horizontal Vent Pipes

Section 38. Where rows of fixtures are placed in a line, fittings of not less than forty-five (45) degrees to the horizontal must be used on vent lines, provided that on brick or tile walls, where it is necessary to channel same for pipes, ninety (90) degree fittings will be allowed.

Vent pipes from several traps may be connected together, or may be carried separately into the main vent pipe above the highest fixture. Where one vent pipe connects with another, a "Y" fitting must be used. Branch vent pipes must be connected as near to crown of trap as possible.

Offsets on Vent Line

Section 39. All offsets on vent lines must be made at an angle of not less than forty-five degrees to the horizontal, and all lines must be connected at the bottom with a soil or waste pipe, or the drain, in such manner as to prevent the accumulation of rust, scale or condensation.

Rubber Connections

Section 40. Rubber connections for back vents will not be permitted without double coupling, and thimble inside.

Ventilator Flues Prohibited.

Section 41. No brick, sheet metal, or earthen ware flue, or chimney flue, shall be used as a sewer ventilator, or to ventilate any trap, drain, soil or waste pipe.

Soldering Nipples

Section 42. Soldering nipples must be extra heavy brass or brass pipe, iron pipe size.

Brass Cleanouts

Section 43. Brass screw caps for cleanouts must be extra heavy, not less than one-eighth of an inch thick. The screw cap must have a solid square or hexagonal nut, not less than one inch high. The body of cleanout ferrule must, at least, equal in weight and thickness the caulking ferrule, for the same size pipe.

Diameter and Weight of Ferrules

Section 44. Brass ferrules must be of best quality, bell shaped, extra heavy cast-brass, not less than four inches long, and two and one-quarter inches, three and one-half inches, and four and one-half inches in diameter, and not less than the following weights:

Diameter two and one-fourth inches, weight one pound.

Diameter three and one-half inches, weight one pound twelve ounces.

Diameter four and one-half inches, weight two pounds eight ounces.

Setting of Fixtures

Section 45. The closet and all other fixtures must be set open, and free from all inclosing wood or other work. Where water closets will not support a rim-seat,

the seat must be supported on galvanized iron legs, and a drip tray must be used, which tray must be porcelain, enamel or both sides and secured in place. In tenement houses and lodging houses, sinks must be entirely open, set on iron legs or brackets, without any inclosing wood or other work.

Closets Prohibited

Section 46. Pan, plunger or hopper closets will not be permitted in any building. No range closet, either wet or dry and no evaporating system of closets, shall be constructed or allowed inside of any building. A separate building constructed especially for the purpose, must be provided, in which such range closets shall be set.

Water Closet Connections with Soil Pipe

Section 47. All earthenware traps must have heavy brass floor plates, soldered to the lead bends and bolted to the trap flange and the joint made permanently secure and gas tight.

Location of Water Closets Restricted

Section 48. Water closets must not be located in sleeping apartments, nor in any kitchen or living room, nor in any room or compartment which has not direct communication with external air, either by window or air-shaft having an area of at least four square feet. Water closets may be so located that they may be entered directly from a sleeping apartment, kitchen or living room, provided that the toilet room is enclosed by a tight partition of brick, hollow tile or lath and plaster, and have light and ventilation direct to the outer air, as above.

Fixtures, How Supplied

Section 49. No water closets, or urinals, except those with flush meters, volumeters or similar devices, shall be supplied directly from the supply pipes.

All water closets must have flushing-rim bowls.

Iron trough water closets and trough urinals must be porcelain enameled or galvanized cast iron.

All water closets and other fixtures must be provided with a sufficient supply of water for flushing, to keep them in a proper and cleanly condition.

Water closet flush pipes must not be less than one and one-quarter inches, and urinal flush pipes one-half inch in diameter.

Water closets and urinals, within buildings shall be supplied with water from special tanks or cisterns, which shall hold not less than six gallons, when full to the level of the overflow pipe, for each closet supplied, excepting automatic or siphon tanks, which shall hold not less than five gallons for each closet supplied. A group of closets may be flushed from one tank, but water closets on different floors must not be flushed from the same tank, except flushimeters, volumeters or similar devices. The water in said tanks must not be used for any other purpose.

Flush Valves, Volumeters, etc.

Section 50. Flush valves or similar devices on sanitary fixtures must be provided with individual controlling stops and must be connected to a water supply that will maintain a pressure of not less than five pounds to the square inch at each device when it is flushing. Such devices must be of simple construction which will result in the minimum practicable amount of wear and prevent water waste, must be so constructed that they cannot be held open for continuous discharge, and must fulfill all of the conditions of this paragraph without requiring regulation if the static water pressure varies from five to seventy-five pounds to the square inch. The quantity of water discharged by each device at each operation shall be within the following limits:

Water closets and slop sinks,	3	to 5	gallons
Pedestal or siphon-jet urinals,	2	to 3.5	gallons
Flush-rim or individual stall urinals,	0.75	to 2	gallons

Water Closets for Tenement Houses

Section 51. The toilet rooms of tenement or lodging houses shall not be permitted in cellars, basements, or under side-walks, except by special permission of the Board of Health, and then only when there is ample provision made for the natural lighting and ventilation of such toilet rooms.

Number of Closets Required

Section 52. In all sewer connected, occupied buildings, there must be at least one water closet, and there must be additional closets so as there will never be more than fifteen persons per closet. In lodging-houses, where there are more than fifteen persons on any floor, there must be an additional water closet on that floor for every fifteen additional persons, or fraction thereof.

Water Closet Compartments

Section 53. In tenement-houses, lodging-houses, factories, work-shops, and all public buildings, the entire water closet compartments and sidewalls, to a height of sixteen inches from the floor, except at the door, must be water-proof with asphalt, cement, tile or other water-proof material, as approved by the Board of Health. In tenement houses and lodging-houses, the water closet and urinal compartments must have a window or windows opening into the outer air, of sufficient size, all of which shall be shown on plans, and shall be subject to the approval of the Board of Health. Except that tenement or lodging-houses, three stories or less in height, may have such windows opening on a ventilating shaft, not less than ten square feet in area. In all buildings, the outer partition of such compartments must extend to the ceiling, or be independently ceiled over, and these partitions must be air-tight. The outside partitions must include a window opening to the outer air on the lot whereon the building is situated; or some other approved means of ventilation must be provided. When necessary to properly light such compartments, the upper part of the partitions must be of glass. The interior partitions of such compartments must be dwarf partitions.

Construction of Urinals

Section 54. All urinals must be constructed of materials impervious to moisture and which will not corrode under the action of urine. The floor and walls of urinal compartments must be lined with similar non-absorbent and non-corrosive material. The platforms or treads of urinal stalls must not be connected independently to the plumbing system, nor can they be connected to any safe waste pipe.

Lining for Closet and Urinal Cisterns

Section 55. The copper lining of water closet and urinal cisterns must not be lighter than twelve-ounce copper which must be stamped on lining with maker's name. Where lead is used for lining, it must not weigh less than four pounds to the square foot. All other materials are prohibited.

Fixtures Prohibited

Section 56. Wooden wash-trays, sinks or bath-tubs are prohibited inside of buildings. Such fixtures must be constructed of non-absorbent material. Cement or artificial stone tubs will not be permitted, unless approved by the Board of Health.

Yard Water Closets

Section 57. Water closets when located in yard must be so arranged as to be conveniently and adequately flushed, and the water supply pipes and traps protected from freezing by being placed at least four feet below the surface of the ground and having clean earth filled in over them, with an accessible cleanout plug from trap brought to the surface of the closet floor, or by being placed in a pit at least four feet deep. The walls of said pit shall be constructed of hard burned brick or stone, laid in cement mortar, or of concrete; the bottom of pit to be cemented.

The trap in pit must have a cleanout caulked in. In cases where the closet is located at the rear end of a soil line, said soil line shall be vented with a four inch pipe carried above roof of closet, away from any opening or window.

All outside closets shall be of the tank pattern. The water to be supplied to tank through an automatic seat-action valve. The waste from valve may be permitted to discharge on cement floor of pit, which shall be provided with four inch trap and strainer. The enclosure of yard water closets shall be ventilated by slatted openings, and there shall be a trap door of sufficient size to permit of convenient access to the pit.

ARTICLE III

Privy Vaults and Cesspools Prohibited where Sewers are Accessible

Section 1. No privy vault, cesspool or other receptacle for human excrement shall be constructed or maintained upon any property located where a public sewer is accessible. The Board of Health may issue notice that any privy vault, cesspool or other receptacle for human excrement upon any property located where a public sewer is accessible must be abandoned, cleansed and filled in or arched over with stone or brick masonry, or concrete in a substantial manner; providing that three months time for compliance is given in said notice.

No connection shall be made to any public sewer whereby the contents of any privy vault, cesspool or other receptacle for human excrement may be admitted to said sewer.

Where Sewers are not Accessible

Section 2. Where no public sewer is accessible to any property, privy vaults, cesspools or other receptacles for human excrement may be constructed and maintained thereon; provided that the same shall be constructed in a substantial manner and maintained in a sanitary condition, both construction and maintenance to be satisfactory to the Board of Health.

Privy vaults, cesspools or other receptacles for human excrement must not be located within two (2) feet of any party or street line, except where used jointly by occupants of adjacent properties; nor within twenty (20) feet of any building used for human occupation, except upon written permit from the Board of Health; and must not be so located or constructed as to be menace to a well or other source of water supply. In such cases a water tight vault or cesspool, provided with a manhole, must be constructed and the contents removed before it becomes filled.

Abandoning of Privy Vaults

Section 3. When a privy vault or well is to be abandoned, it must be cleaned by having its contents removed and disposed of in a sanitary manner. Immediately after cleaning, application must be made in writing to the Board of Health for an inspection, and approval of the Board of Health. All vaults should be disinfected by the liberal use of unslaked lime and filled with clean earth, ashes or cinders.

ARTICLE IV

Material and Workmanship

Section 1. All materials used in the work of plumbing and house drainage must be of good quality and free from defects. The work must be executed in a thorough and workmanlike manner.

No Plumber shall Allow Name to be Used by Others

Section 2. No person, firm or corporation, carrying on the business of plumbing and house drainage, shall allow his or their name to be used by any other person, directly or indirectly, either to obtain a permit or permits or to do any work under his or their license.

Terms Used

Section 3. The term "private sewer" is applied to main sewers that are not constructed by and under the supervision of the municipal authorities.

The term "house sewer" is applied to that part of the main drain or sewer extending from a point five feet outside of the outer wall of a building, vault or area to its connection with public sewer, private sewer or cesspool.

The term "house drain" is applied to that part of the main horizontal drain and its branches inside the walls of the building, vault or area, and extending from the soil pipe or stack to and connecting with the house sewer.

The term "soil pipe or stack" is applied to any line of pipe in the building and extending from the house drain to the roof, receiving the discharge of one or more water closets, with or without other fixtures.

The term "waste pipe" is applied to any pipe receiving the discharge from fixtures other than water closets.

The term "vent pipe or stack" is applied to any line of pipe provided to ventilate the system of piping and prevent trap siphonage and back air pressure. It applies also to the soil pipe or stack above the entrance of the discharge from the highest fixture.

Correction of Defective Plumbing

Section 4. Whenever it shall come to the knowledge of the Board of Health, or complaint in writing shall be made by any citizen, that the plumbing or drainage in any building has become a nuisance, or is contrary to the provisions and requirements of this ordinance, or is of faulty construction and liable to endanger the health or comfort of the occupants, then the Board of Health shall direct the Plumbing Inspector or Plumber employed for the purpose, to examine the plumbing or drainage in any such building and the said officer shall make a drawing of the plan of said plumbing, drainage and sewer and ventilating shaft connections. He shall report his findings, in writing, to the Board of Health, and suggest such changes as are necessary to make the same conform to the rules governing such matters.

The Board of Health shall thereupon notify the owner or agent of such building of the changes which it finds necessary to be made in said plumbing or drainage. Said changes shall be made within the time fixed by the Board of Health; and, upon refusal or neglect to obey such orders, the Board of Health shall have said nuisance abated and may also proceed to recover the penalties provided in Section 11 of this Article in a case of summary conviction.

First Test

Section 5. When drain, soil, waste, vent and other pipes in the building, connected or to be connected with the sewer, have been placed in position, a preliminary test by an approved method shall be applied in the presence of an officer of the Board of Health, and to his approval.

Final Test

Section 6. When the work has been completed, a final notice shall be filed with the Board of Health, after which a final air, water, smoke, peppermint or other test by an approved method shall be made, in presence of said officer; when if found satisfactory, a certificate of approval of the work will be issued; but no plumbing or drainage work or system shall be used until said test has been made and certificate issued.

Arrange for Inspection

Section 7. When work is ready for inspection the plumbing contractor shall make such arrangements as will enable the proper officer to reach all parts of the building easily and readily, and also have present the proper apparatus and appliances for making said tests, and furnish such assistance as may be necessary to a proper application of the same.

Adjustment of Disputes

Section 8. In case of any dispute or difference of opinion existing between the Plumbing Inspector and any person, firm or corporation, regarding the construction of plumbing, house drainage or cesspools, the same shall be submitted by either party to the presiding officer of the Board of Health, who shall pass upon the same, and whose findings therein, after hearing, shall be final.

Whenever in this ordinance the words "accessible, approved," or words of like import are used; it shall be understood that the accessibility or approval or like matters shall be determined by the Board of Health.

Additional Rules and Regulations

Section 9. The Board of Health shall have the power to make such additional rules, regulations and requirements relative to plumbing or house drainage as they may deem necessary to protect the public health and welfare, providing they are consistent with existing Acts of Assembly.

Powers of the Board of Health

Section 10. The Board of Health shall have the power and it shall be their duty to enforce this ordinance and carry into effect the functions hereby invested in them. Whenever notice is given under the provisions of this ordinance, the same shall be served upon the persons required to make correction, or his agent, by the duly authorized plumbing inspector or agent of the Board of Health, or by mailing a copy of the said notice to the last known address of such person or his agent.

Violations and Fines

Section 11. Any person or persons who shall fail to comply with any of the provisions of this ordinance, regarding the procuring of a license or certificate to engage in or work at the business of plumbing or house drainage, shall upon conviction before any justice of the peace, alderman or magistrate, be fined not less than ten dollars (\$10.00) nor more than fifty dollars (\$50.00), for each and every day he or they shall engage in or work at said business, without first having obtained said certificate or license; and any person or persons who shall violate any of the rules, regulations, or requirements, set forth in this act, regarding the construction, reconstruction, testing or maintenance of plumbing, house drainage, or cesspools, shall be liable, for every such offense, to a fine of not less than ten dollars (\$10.00), nor more than fifty dollars (\$50.00).

All fines and penalties imposed by this act shall be recoverable, by summary proceedings, before any justice of the peace in said _____, and all fines and penalties shall be paid to the treasurer of _____. In default of payment of any fine or penalty imposed by any justice of the peace, under the provisions of this ordinance, the person or persons so offending shall be committed to the jail, or other penal institution of the _____, for a period not exceeding thirty days.

Repealing

Section 12. All ordinances or parts of ordinances inconsistent herewith are hereby repealed.

METHODS OF SECURING HEALTH LEGISLATION IN BOROUGHES

A borough denotes an incorporated town or village.

(1) The general borough Act approved May 14, 1915, P. L. 312, regulates the government of boroughs.

(2) The governing body is a Council consisting of seven in boroughs not divided into wards, or into wards there shall be from one to three representatives from each ward.

(3) Council enacts, revises, repeals, and amends such rules, regulations and ordinances as they deem necessary and provides for their enforcement.

(4) An ordinance can be introduced only by a member of Council and at a formal meeting. It must be in writing and have a title, which clearly sets forth and is entirely in agreement with the body of the ordinance. To be effective it must provide for enforcement and must also set forth penalties for violations of its requirements not to exceed \$100.00 and costs and in default of payment of fine the violator may be committed to the borough lockup for a period not to exceed five days or to the county jail for a period not to exceed 30 days.

(5) An ordinance passed by Council becomes law by approval of the burgess; by subsequent passage by council over his veto or by his failure to either sign or return it to council at the next meeting.

(6) The ordinance must be recorded in the ordinance book, published in at least one newspaper in the county and by 12 advertisements posted in public places in the borough for ten days before the ordinance takes effect.

(7) In a borough where council has created various committees it will generally be advisable to have health ordinances introduced by the chairman or some member of the Committee on Health and Sanitation, as it is probable that council will refer the ordinance to that committee for report.

(8) Where there is either apathy or opposition to the health ordinance on the part of the local officials, it will probably be advisable to secure the interest of the citizens in the matter, through the public press and the various organizations interested in public affairs, in order that an insistent demand upon council and the burgess for the passage of the needed ordinance may be made, by such bodies and by citizens as individuals.

(9) It should be borne in mind that only members have the right to speak in a council meeting and citizens, no matter what their position or influence, have no right to speak in favor or against pending legislation unless they are granted the privilege of the floor by the council.

(10) Another method of securing health legislation in a borough would be through the enactment of rules and regulations by the board of health.

(11) The borough code requires that a board of health consisting of five persons, shall be established in each borough. The members of the board are appointed by the president of the borough council. No justice of the peace, member of council, or other officers, except school directors, constables, or election officers, shall, at the same time, be a member of the board of health, or hold any office or appointment under the same. The board of health elects a president from among the members of the board also a secretary who may or may not be a member of the board and also a health officer who shall not be a member of the board. The secretary and the health officer shall receive such salary as may be fixed by the board and ratified by the borough council and shall serve for a period of one year or until such time thereafter as their successors may be elected and qualified. The members of a board of health in a borough may be removed at the pleasure of the president of councils who appoints them. The health officer and the secretary of a board of health may be removed by the President of Council if he also removed the Board of Health.

(12) The State law has given the board of health the power and made it their duty to enforce the laws of the Commonwealth, the regulations of the State Department of Health and to make and enforce such additional rules and regulations as they shall deem necessary for the preservation of the public health.

(13) When the rules and regulations of the board of health are approved by the borough council and burgess and advertised in the same manner as is required for ordinances of council they have all the force of an ordinance of the borough council. But council have no power to repeal such rules and regulations without consent of the board of health.

(14) If this method of securing health legislation is to be used in a borough, an ordinance should first be introduced and passed by council and approved by the burgess, providing penalties for the violation of any rules and regulations issued by the board of health.

(15) Then such rules and regulations as are deemed necessary in any particular matter should be prepared, passed by the board of health at a formal meeting and then approved by council and the burgess and advertised similarly to the publication of an ordinance.

(16) The model health ordinance prepared by the State Department of Health can be changed by a person versed in the law, so as to be used as the basis for rules and regulations of the board of health as aforesaid.

(17) The health sub-committee should also bear in mind that it is their purpose to advance the interests of the public health and that mere antagonism of municipal officials will not accomplish the purpose. If municipal officials are lethargic and indifferent, it will require a demand from the citizens of the borough to obtain action on the part of their representatives in council and other officials.

MODEL ORDINANCE FOR HYGIENIC REGULATIONS OF PUBLIC EATING AND DRINKING PLACES

The Act of Assembly approved May 28, 1915 (P. L. 642), and the Rules and Regulations adopted January 3, 1913, by the Advisory Board of the State Department of Health constitute the State law for regulation of hygienic conditions in public eating and drinking places.

The following model ordinance, based upon these laws, was prepared by the State Department of Health as a general suggestion for Pennsylvania municipalities.

Local officials should carefully study the draft and determine its applicability to local conditions.

Any changes made to meet local requirements should receive the approval of the local law officer before enactment of the ordinance; for the suggested draft has been approved by the Attorney General of the Commonwealth as to legal form and compliance with requirements of the constitution.

The State Department of Health will be pleased to furnish additional information or advice, if requested by the local authorities.

AN ORDINANCE

to protect the public health:—defining public eating and drinking places; prohibiting the employment of unhealthy persons, the use of the common drinking vessel and common towel and regulating the sanitary conditions in public eating and drinking places and providing for enforcement and imposing penalties for violation.

ARTICLE I.

Section 1. The Council of Pa., does hereby enact an ordinance to protect the public health by hygienic regulation of public eating and drinking places.

ARTICLE II.

Section 1. For the purpose of this ordinance the words "public eating and drinking place" shall mean any place where food or drink is served to or provided for the public with or without charge; such as hotels, restaurants, cafes, cafeterias, boarding houses; street vendors or stalls; ice cream saloons, soda water or soft drink fountains, bars or taverns; private, public, parochial or Sunday schools; churches, hospitals and public institutions; industries, factories, shops, offices, office buildings, stores; railroad stations, parks, picnic grounds, fair grounds, campmeeting grounds; theatres or motion picture houses; public pumps, wells, springs or other water supplies, etc.

Section 2. For the purpose of this ordinance the word "Proprietor" shall mean any person, firm or corporation who conducts a public eating or drinking place.

Section 3. For the purpose of this ordinance the word "employee" shall mean any person employed in a public eating or drinking place who does or may in any manner handle or come in contact with food or drink served to or provided for the public and shall include the proprietor or manager or any member of his family if they handle said food or drink.

ARTICLE III.

Health of Employees.

Section 1. No person who is suffering from any communicable disease such as trachoma, active tuberculosis of the lungs, open skin tuberculosis, syphilis, gonorrhea, open external cancer or barbers itch shall be an employee in any public eating or drinking place.

Section 2. The proprietor of every public eating and drinking place shall institute and maintain a medical inspection of all of his employees at intervals of at least twice a year for the purpose of compliance with section one of this Article; provided however, that this periodic inspection shall not be cause for maintaining in employment any employee found to be suffering from any communicable disease in the interim. The said medical inspection shall be made by a reputable registered doctor of medicine and filed with the Board of Health upon approved forms.

Section 3. No person who is a carrier of any communicable disease such as typhoid fever, diphtheria, septic sore throat, scarlet fever, etc., shall be an employee in any public eating or drinking place after written notice that such employee is a carrier of a communicable disease has been served upon the proprietor by a physician or by the board of health or by any officer of the board of health or of the State Department of Health.

ARTICLE IV.

Common Drinking Vessels and Towels.

Section 1. No proprietor of any public eating or drinking place shall furnish or keep in or about such place any common drinking vessel for common use; provided, however, that this section shall not preclude the use of vessels which are cleansed by washing with soap and water having a temperature about 130 degrees Fahrenheit, or after cleansing, by being placed in a closed container and exposed to air heated to at least 300 degrees Fahrenheit for a sufficient time to effect disinfection of the vessel; or which are destroyed after individual use.

Section 2. No proprietor of any public eating or drinking place having and maintaining in connection therewith any wash room for public use or for the use of their patrons or customers, shall furnish or maintain in such wash room any towel; unless such towel be laundered or discarded after each individual use.

ARTICLE V.**Sanitary Requirements.**

Section 1. All cups, dishes, spoons, knives, forks, finger bowls and other eating utensils used in any public eating place shall be thoroughly cleansed by washing with soap and water having a temperature above 130 degrees Fahrenheit after each individual use.

Section 2. Every proprietor of a public eating or drinking place shall keep the said place and all substances used therein for food or drink in a clean, wholesome and sanitary condition free from dust, flies, insects and animals.

All employes in such places shall keep themselves and their clothing in a clean condition.

No employe shall handle any food or drink after having visited a toilet without thoroughly washing the hands with soap and water.

Section 3. Every proprietor of a public eating place shall provide and maintain in a suitable location a sufficient number of garbage containers of watertight construction made of non-absorbent material and provided with handles and close-fitting covers and all garbage shall be kept therein pending its removal and disposal. Filled garbage containers shall not be allowed to remain in any room where food is prepared or eaten.

Section 4. All doors, windows and other openings of any public eating or drinking place shall be provided with screens or netting so constructed and maintained as to prevent the ingress of flies or other insects.

ARTICLE VI.**Enforcement.**

Section 1. It shall be the duty of the board of health to enforce the terms of this ordinance and secure compliance with the requirements thereof.

ARTICLE VII.**Penalties.**

Section 1. Any proprietor of any place of public eating or drinking violating any of the provisions of this ordinance shall upon conviction thereof before any Justice of Peace, Alderman, or Magistrate be subject to a fine of not less than ten (10) dollars nor more than fifty (50) dollars.

ARTICLE VIII.**Repealing.**

Section 1. All ordinances or parts of ordinances inconsistent herewith are hereby repealed.

MODEL GARBAGE ORDINANCE

The following model garbage ordinance was prepared by the State Department of Health as a general suggestion for Pennsylvania municipalities.

Local officials should carefully study the draft and determine its applicability to local conditions.

Any changes made to meet local requirements should receive the approval of the local law officer before enactment of the ordinance; for the suggested draft has been approved by the Attorney General of the Commonwealth as to legal form and compliance with requirements of the constitution.

The State Department of Health will be pleased to furnish additional information or advice, if requested by the local authorities.

AN ORDINANCE

Defining garbage; providing for its collection and disposal; providing for enforcement thereof, and penalties for violation.

ARTICLE I

Definitions

Section 1. Be it ordained by the Council of the _____ of _____, Pennsylvania, and it is hereby ordained by authority of the same, That for the purposes of this ordinance the word "garbage" shall be considered to mean the animal or vegetable refuse from the storage, vending, sale, preparation or use of food-stuffs; such as meats, fish, fruits or vegetables.

ARTICLE II

Containers

Section 1. The occupants of dwellings, apartments, tenements and other houses, and the proprietors of commission houses, stores, stands, markets, boarding-houses, hotels and restaurants, and other places where garbage is produced, shall provide and maintain containers as required hereinafter for all garbage accumulated on the premises thereof.

Section 2. Containers for garbage shall be not less than $\frac{1}{2}$ cu. ft. capacity, nor more than $1\frac{1}{2}$ cu. ft.; provided, however, that commission houses, stores, stands, markets, hotels, restaurants and other places producing large quantities of garbage shall be permitted to use containers of capacity as large as $3\frac{1}{2}$ cu. ft.

A sufficient number of containers shall be provided so that the aggregate capacity shall be sufficient for normal needs between the intervals of collection given hereinafter.

Section 3. Containers shall be made of non-absorbent material, be water tight and fly tight, and be provided with handles and closely

fitting covers made of non-absorbent material. The containers shall be kept in repair so as to be at all times water tight.

Section 4. *Containers shall be used only for garbage as defined hereinbefore. No more water shall be allowed or permitted in garbage than naturally accumulates from table refuse. The containers shall be kept covered and after they are emptied shall be cleansed by the occupants or proprietors aforesaid.

Section 5. On the days when collection is to be made the occupant or proprietor of the place where the garbage is accumulated shall place the container at a point on the premises where it is readily accessible to the collectors.

Section 6. No garbage shall be allowed to accumulate on the ground nor be deposited on highways, vacant lots, or commons, nor be thrown into any stream or other body of water.

ARTICLE III

Collection

Section 1. From April 15th to October 15th, inclusive, garbage shall be collected at least twice† each week and from October 15th to April 15th inclusive, at least once each week except as otherwise provided hereinafter.

Section 2. Garbage shall be collected from premises between the hours of sunrise and sunset, except as otherwise provided hereinafter.

Section 3. The containers shall be emptied in a cleanly manner so as not to foul the premises or the highway.

Section 4. Garbage shall be collected daily, exclusive of Sunday, from such hotels and other places or establishments as may be designated by ‡_____.

Section 5. Garbage shall be collected from public markets and market places at the close of the market on the days they are open for business.

Section 6. Every person, partnership, firm or corporation desiring to engage in the business of collecting garbage within the limits of _____ shall before engaging in said business obtain a written permit or license from §_____ and agree to conduct said business in strict conformity with the requirements of this ordinance.

The permit or license shall not be granted for a period of more than one year and shall be revocable at any time for non-compliance with the requirements of this or relevant ordinances.

ARTICLE IV

Transportation

Section 1. The carts or vehicles used by the collectors of garbage for transportation from the premises to place of disposal shall be of substantial construction, watertight, and provided with covers which shall be closed at all times save when garbage is being placed in the cart or vehicle.

*Where garbage is disposed of by feeding to hogs this section should include a specific prohibition against glass, tin cans, etc., being placed in garbage containers.

†If disposal be by feeding to hogs, use "three times" each week so as to secure fresh garbage for the hogs.

‡Insert here the name of the Municipal Board, Bureau or Department having jurisdiction over the collection and disposal of garbage.

§See foot note Article III, Section 4.

They shall not be overfilled so as to endanger fouling the highway and shall be cleansed at sufficiently frequent intervals to prevent any nuisance from odors.

ARTICLE V

Disposal

Section 1. The method used for the disposal of garbage shall be approved by the Board of Health. It shall be conducted and maintained so as not to create a public nuisance, permit fly breeding, or be in any way a menace to the public health.

ARTICLE VI

Enforcement

Section 1. It shall be the duty of **_____ to enforce the term of this ordinance and secure compliance with the requirements thereof.

ARTICLE VII

Penalties

Section 1. Any person, partnership, firm or corporation violating any of the provisions of this ordinance shall upon conviction thereof before any justice of the peace, alderman or magistrate be subject to a fine of not more than _____ for each offense and in default of the payment of said fine and costs of prosecution shall be imprisoned for a period of not exceeding _____ days.

ARTICLE VIII

Repeal of Inconsistent Ordinances

Section 1. All ordinances or parts of ordinances inconsistent herewith are hereby repealed.

**See foot note Article III, Section 4.

MODEL MILK ORDINANCE

The following milk ordinance has been prepared by the State Department of Health as a general suggestion for the preparation of a local milk ordinance in the various cities, townships and boroughs of the Commonwealth of Pennsylvania.

The purpose is to protect the public health by securing an improvement in the quality and purity of milk, and further to obtain uniformity among the laws of the various municipalities.

This ordinance is not submitted for immediate adoption in its present form, but should be used as a frame-work upon which to build an ordinance which will be exactly suited to local conditions.

Any changes made to meet local requirements should, however, receive the approval of the local law officer before the enactment of the ordinance; for the following draft has been approved by the Attorney General of the Commonwealth as to legal form and compliance with requirements of the State constitution.

The State Department of Health recommends that the local officials

1. Study this model ordinance.
2. Study local conditions as to the production and distribution of milk.
3. Then prepare your local ordinance and submit it to the County Health Council and County Medical Director for consideration and advice before enactment.

AN ORDINANCE

Providing regulations and governing the production, distribution and sale of milk in the _____ of _____ and providing penalties for violation thereof and providing for the repeal of all ordinances or parts of ordinances inconsistent therewith.

Be it ordained by the Council of the _____ of _____ and it is hereby ordained by the authority of the same.

Section 1

For the purpose and within the meaning of this ordinance the following definitions shall obtain:

(a) The term "milk" shall be construed to include cream, sour milk, sour cream, buttermilk, and all other fluid derivatives of milk wherever such construction of the term is applicable.

(b) "Cream" is that portion of the milk rich in butter fat which rises to the surface of the milk on standing, or is separated from it by centrifugal force.

(c) "Person" shall include masculine and feminine, and any firm or corporation, and any agent, servant, assistant, employee or representative thereof.

(d) "Dealer" shall mean any person who sells milk, and his agent, servant, assistant, employee or representative, and shall include masculine and feminine, singular and plural.

(e) "To sell" shall mean the selling, exchanging or delivering or having in possession, care, control or custody with intent to sell, exchange or deliver or to offer or expose for sale.

(f) "Handling milk" shall mean any of the processes, operations or transfers through which milk is passed from the time it is withdrawn from the cow until it is delivered to the consumer.

(g) "Pasteurized Milk" is milk which has been heated to a temperature of 145 degrees Fahrenheit and held for not less than 30 minutes at a temperature of approximately 145 degrees Fahrenheit but never less than 142 degrees Fahrenheit.

(h) "Raw Milk" is milk which has not been heated to the equivalent of pasteurized milk.

(i) "Skimmed Milk" is milk from which substantially all the milk fat has been removed.

(j) "Unsterilized containers" are containers which have not been subjected to moist heat, or moist heat and chemical treatment as may be necessary to effect to a practical degree the destruction of bacteria and other microorganisms therein. No chemicals other than the washing compounds in common use shall be used except by written permission of the Board of Health.

(k) "Bacterial colonies per cubic centimeter" shall be those obtained according to the Standard Methods of Milk Analyses as recommended by the American Public Health Association.

Section 2

No milk shall be handled in the _____ of _____ without a permit issued by the Board of Health or otherwise than in accordance with the terms of said permit and with the regulations of said Board.

The provisions in this section shall not apply to milk when sold in hotels, restaurants and retail stores when such milk has been obtained from one already in lawful possession of a permit for the delivery of milk within the _____ of _____.

Each person desiring a permit from the Board of Health for handling milk shall make application therefor on a printed form to be furnished by said Board of Health. Each permit for handling milk shall be valid for one year from the first day of April. Each person receiving a permit for handling milk shall pay into the treasury of the _____ of _____ the sum of one dollar.

The Board of Health shall not issue a permit for handling milk delivered raw to the consumer until after an examination has been made by a competent representative of the Board of Health as to the sanitary condition of the place where the milk is to be sold and of the place where the milk is to be handled in any way and of the dairy farm where said milk is produced and the Board of Health is satisfied that the care and treatment of said milk will be in accordance with the terms of this ordinance and the regulations of said Board of Health.

The Board of Health shall not issue a permit for handling milk delivered pasteurized to the consumer until after an examination has been made by a competent representative of the Board of Health as to the sanitary condition of the place where the milk is to be sold and of the place where the milk is to be received or handled in any way after delivery from the dairy farm and the Board of Health is satisfied that the care and treatment of such milk will be in accordance with the terms of this ordinance and the regulations of said Board of Health.

Section 3

No person shall sell

(a) Skimmed milk which has not been pasteurized unless made from "Grade A Milk (raw)" or made from pasteurized milk or sell skimmed milk which is not labeled "Skimmed Milk".

(b) Milk, the container of which is labeled or branded so as to mislead or deceive the purchaser.

(c) Milk produced from diseased cows or from cows during a period of fifteen days preceding parturition or within such time thereafter as the milk is abnormal or from cows which have been fed on unwholesome food or have had access to contaminated water.

(d) Milk in unsterilized containers.

(e) Homogenized milk or emulsified milk unless it is plainly and conspicuously labeled, "Homogenized" or "Emulsified" as the case may be.

(f) Milk stored or kept for sale in any stable or any room which is poorly ventilated or dirty, or in which rubbish or waste material is allowed to accumulate.

(g) Milk from vessels not protected by suitable covers or so placed that they can be contaminated by dust, dirt or flies.

(h) Milk transferred from one container to another on the street or at a railroad depot, or at any place other than those places for which a permit for the handling of milk has been issued by the Board of Health.

(i) Pasteurized milk of which a true record of pasteurization as given by recording thermometer approved by the Board of Health is not on file and ready for inspection at the place where the milk is pasteurized. The record on file shall be correctly dated and cover the six months previous to the date of inspection.

(j) Milk repasteurized, unless by special permit from the Board of Health.

Section 4

All milk sold in the _____ of _____ shall be sold under the following grades or designations and not otherwise:

Certified milk
Grade A milk (raw)
Grade A milk (pasteurized)
Grade B milk (pasteurized)
Grade C milk (pasteurized)

"Certified Milk" is the product of dairies operated in accordance with the **"Methods and Standards for the Production and Distribution of Certified Milk,"** adopted by the American Association of Medical Milk Commissions, May 1, 1912, and amendments thereto in effect at the time of production and the production and handling of which shall be certified to by a milk commission instituted in compliance therewith.

"Grade A Milk (raw)" is milk produced and handled in accordance with the following special regulations:

1. **"Grade A Milk (raw)"** shall be milk from a herd, each member of which shall be free from communicable disease as determined by complete physical examination and tuberculin test. Such examination and test must be made by a veterinarian whose competency and reliability have been certified by the Pennsylvania Bureau of Animal Industry. A report of examination and tuberculin test approved by said Bureau must be filed with the Board of Health before the milk of any cow may be sold as **"Grade A Milk (raw)"**.

2. **"Grade A Milk (raw)"** shall not develop more than 100,000 bacterial colonies per cubic centimeter and cream more than 500,000 colonies per cubic centimeter when inoculated into standard agar nor shall milk of this designation show more than 500,000 individual bacteria per cubic centimeter when counted by direct observation under a microscope.

3. **"Grade A Milk (raw)"** shall be delivered to the consumer within 24 hours after production and only in bottles unless otherwise specified in the permit issued by the Board of Health.

4. The caps of all bottles containing **"Grade A Milk (raw)"** shall be uncolored and with the designation **"Grade A Milk (raw)"**, day of week produced and the name and address of the dealer clearly and legibly printed on the outer side of the cap. No other word or mark shall appear on the outer side of the cap containing the designation unless authorized in the permit issued by the Board of Health. The size and arrangement of the lettering on the cap must be approved by the Board of Health.

5. No person having a communicable disease, or caring for or coming in contact with any person so afflicted or who is a **"carrier"** of a communicable disease shall handle milk.

6. The Board of Health shall cause all persons employed in or about dairy barns or milk houses who, in any manner, come in contact with milk on the farms on which **"Grade A Milk (raw)"** is produced, or in any place where **"Grade A Milk (raw)"** is exposed or placed in containers, to be examined for communicable disease at least semi-annually and at any subsequent time as the Board of Health may direct. Those found free from communicable disease shall be furnished a health certificate in accordance with the regulations of the Board of Health. The medical examinations and the issuance of the health certificates shall be at the expense of the Board of Health.

7. The sanitary convenience on the dairy farm, such as privy vaults, cesspools, etc., shall be fly tight and kept in a sanitary condition.

8. The water supply used in the dairy and for washing utensils shall be sufficiently abundant for all purposes, easy of access and free from any contamination.

"Grade A Milk (pasteurized)" is milk produced and handled in accordance with the following special regulations:

1. **"Grade A Milk (pasteurized)"** shall be milk from a herd, each member of which shall be free from communicable disease as determined by complete physical examination. Such examination shall be made by a veterinarian whose competency and reliability have been certified by the Pennsylvania Bureau of Animal Industry.

2. No milk supply shall be pasteurized to be sold as **"Grade A Milk (pasteurized)"** which develops in each of three samples more than 500,000 bacterial colonies per cubic centimeter when inoculated into standard agar or show more than 2,500,000 individual bacteria per cubic centimeter when counted by direct observation under a microscope. Following the analysis of each sample and before another sample of the series of three is taken, the person furnishing the milk supply shall be notified in writing of the results of analyses, and should each of the three analyses show the supply does not meet the requirements for pasteurization, then with the notification of the results of the third sample, there shall be given the notification that the milk supply may no longer be pasteurized for sale as **"Grade A Milk (pasteurized)"**. The milk supply thus excluded shall not again be pasteurized for sale as **"Grade A Milk (pasteurized)"** until three samples are collected and analyzed in the same manner as the previous three samples were collected and analyzed and the supply shown to conform to the requirements of milk for pasteurization as **"Grade A Milk (pasteurized)"**.

3. **"Grade A Milk (pasteurized)"** shall not develop more than 50,000 bacterial colonies per cubic centimeter and cream more than 250,000 colonies per cubic centimeter when inoculated into standard agar from a sample of **"Grade A Milk (pasteurized)"** as delivered to the consumer, or at any time after pasteurization or prior to such delivery.

4. **"Grade A Milk (pasteurized)"** shall be delivered to the consumer within 24 hours after pasteurization.

5. **"Grade A milk (pasteurized)"** shall be delivered to the consumer in bottles only unless otherwise specified in the permit issued by the Board of Health.

6. The caps of all bottles containing **"Grade A Milk (pasteurized)"** shall be uncolored and with the grade and designation **"Grade A Milk (pasteurized)"**, the name and address of the dealer and day of week pasteurized, clearly and legibly printed on the outer side of the cap. No other word or mark shall appear on the outer side of the cap containing the designation unless authorized in the permit issued by the Board of Health. The size and arrangement of lettering on such cap must be approved by the Board of Health.

"Grade B Milk (pasteurized)" is milk produced and handled in accordance with the following special regulations:

1. **"Grade B Milk (pasteurized)"** shall be milk from a herd, each member of which shall be free from communicable disease as determined by complete physical examination. Such examination shall be made by a veterinarian whose competency and reliability have been certified by the Pennsylvania Bureau of Animal Industry.

2. No milk supply shall be pasteurized to be sold as **"Grade B Milk (pasteurized)"** which develops in each of three samples more than 1,500,000 colonies per cubic centimeter when inoculated into

standard agar or shows more than 7,500,000 individual bacteria per cubic centimeter when counted by direct observation under a microscope. Following the analysis of each sample and before another sample of the series of three is taken, the person furnishing the milk supply shall be notified in writing of the result of analyses and should each of the three samples show the supply does not meet the requirements for pasteurization then, with the notification of the results of the third sample, there shall be given the notification that the milk supply may no longer be pasteurized for sale as "Grade B milk (pasteurized)". The milk supply thus excluded shall not again be pasteurized for sale as "Grade B milk (pasteurized)" until three samples are collected and analyzed in the same manner as the previous three samples were collected and analyzed and the supply is shown to conform to the requirements of milk for pasteurization as "Grade B Milk (pasteurized)".

3. "Grade B Milk (pasteurized)" shall not develop more than 100,000 bacterial colonies per cubic centimeter and cream more than 500,000 colonies per cubic centimeter when inoculated into standard agar from a sample of "Grade B Milk (pasteurized)" as delivered to the consumer, or at any time after pasteurization or prior to such delivery.

4. "Grade B Milk (pasteurized)" shall be delivered to the consumer within 36 hours after pasteurization.

5. "Grade B Milk (pasteurized)" shall be delivered to the consumer in bottles, unless otherwise specified in the permit issued by the Board of Health.

6. The caps of all bottles containing "Grade B Milk (pasteurized)" shall be uncolored and the grade and designation "Grade B Milk (pasteurized)", the name and address of the dealer and day of week pasteurized, clearly and legibly printed on the outer side of the cap. No other word or mark shall appear on the outer side of the cap containing the designation unless authorized in the permit issued by the Board of Health. The size and arrangement of the lettering on the cap must be approved by the Board of Health.

"Grade C Milk (pasteurized)" is milk produced and handled in accordance with the following special regulations:

1. "Grade C Milk (pasteurized)" shall be milk from a herd, each member of which shall be free from communicable disease as determined by complete physical examination. Such examination shall be made by a veterinarian whose competency and reliability have been certified by the Pennsylvania Bureau of Animal Industry.

2. "Grade C Milk (pasteurized)" shall not develop more than 300,000 bacterial colonies per cubic centimeter and cream more than 1,500,000 colonies per cubic centimeter when inoculated into standard agar from a sample of "Grade C Milk (pasteurized)" as delivered to the purchaser or at any time after pasteurization or prior to such delivery.

3. "Grade C Milk (pasteurized)" shall be delivered within 36 hours after pasteurization and shall be used only in the preparation of products in which cooking is required.

4. "Grade C Milk (pasteurized)" shall be stored and handled in containers of not less than one gallon capacity.

5. The containers containing "Grade C Milk (pasteurized)" shall have the designation "Grade C Milk (pasteurized)" painted upon the containers. The size and arrangement of the lettering upon the containers must be approved by the Board of Health.

Section 5

1. Any dealer selling milk to consumers from a conveyance shall have painted on both sides of said conveyance in a conspicuous place, the name and address of the dealer. The size and arrangement of the letters on said conveyance must be approved by the Board of Health.

2. Any person having the possession or custody of bottles, cans or other receptacles used to sell milk shall cause any such bottles, cans or receptacles to be cleaned immediately upon emptying the same; and no person shall use a milk vessel as a container for any other substance than milk.

3. No dealer or other person shall remove from any dwelling in which exists any case of communicable disease any bottle or receptacle which has been, or which is to be used for containing or storing milk except with the permission of the Board of Health.

Section 6

Any member of the Board of Health and any officer or agent of the Board of Health shall have the right and authority to enter and to have full access to any building, structure or farm where any milk is stored or kept and shall have the right of access to all wagons, railroad cars or any other vehicles of any kind used for the conveyance or delivery of milk and to any building, structure or farm where he believes or has reason to believe milk is stored or kept for sale; and upon payment therefor at the usual market rate when payment is demanded, shall have the right to take samples therefrom (any one sample not to exceed one quart) for the purpose of inspecting, testing or analyzing the same. Every sample of milk taken by a member or officer or agent of the Board of Health shall have a label attached to the vessel containing such sample and shall have written thereon at the time of the taking of the sample, or immediately thereafter, the number of the dealer's permit, the number of the sample, the date of collection, the name of the member or officer or agent of the Board of Health taking the sample; and a memorandum shall be made by the member or officer or agent of the Board of Health collecting such sample of the information contained on the label attached to the vessel containing the sample together with the name of the person from whom collected. The member or officer or agent of the Board of Health collecting the sample shall offer to the person from whose possession the sample is taken the information contained on the memorandum.

Section 7

The Board of Health of the _____ of _____ is hereby charged with the enforcement of the provisions of this ordinance. The Board of Health is further authorized to make such regulations from time to time as are necessary for the efficient execution of the provisions of this ordinance. The Board of Health, after affording the permittee an opportunity for a hearing, may suspend or revoke

any permit issued by it under this ordinance whenever it shall determine that the permittee has violated any of the provisions of this ordinance or of the regulations made hereunder. Any permit issued by the Board of Health may be suspended temporarily by the Board of Health whenever it deems necessary.

Section 8

That any person violating any of the provisions of this ordinance shall, on conviction by any magistrate, justice of the peace or alderman, be sentenced to pay a fine of not more than _____ dollars, and for each subsequent offense, and conviction thereof, shall be punished by a fine of not more than _____ dollars. In default in the payment of any fine the defendant shall be sentenced to jail for a period of not exceeding _____ for the first offense and not exceeding _____ for any subsequent offense.

Section 9

Any ordinance or part of ordinance conflicting with the provisions of this ordinance be and the same is hereby repealed, so far as the same affects this ordinance.

RECOMMENDATIONS CONCERNING THE HANDLING OF MILK AT MILK DISTRIBUTING STATIONS

1. That the number of bacteria contained in raw milk as delivered to the milk station be counted by means of the microscope. This method not only gives information concerning the number of bacteria, but also gives information concerning the kind of bacteria and the results may be used in helping the producer locate the cause of excessive numbers.

2. That all milk be clarified.

3. That milk cans shall be sterile and dry when returned to the producer or milk depot.

4. That milk bottle caps shall be purchased in sterile tubes and the capping of bottles be done by machine.

5. That the consumer be educated in the return of milk bottles to the dealer.

RECOMMENDATIONS CONCERNING THE HANDLING OF MILK AT THE DAIRY FARMS

1. That a milk house be provided which is not directly connected with the stable or the dwelling. The milk should be taken directly from the stable to the milk house and there prepared for delivery. The milk house must not be used for any purpose other than the handling of milk or milk products.

2. That cows be cleaned before milking.

3. That a small-top milking pail be used during the process of milking. The inner surface of the milking pail, as well as other utensils, should be smooth and heavily tinned and all seams soldered flush.

4. That the clothing of milk handlers consist of clean outer garments of some light colored material. The hands of the milkers and milk handlers should be washed clean with soap and water immediately prior to, and kept clean during milking and the handling of milk. The hands should be kept dry while milking. The practice of moistening the hands with milk is very insanitary.

5. That the milk, as soon as drawn, be removed to the milk house and cooled to a temperature as low as the facilities at hand will permit. The more rapidly the milk is cooled, the safer it is and the longer it will keep sweet. Local conditions may warrant the delivery of morning's milk direct to the cooling station or pasteurization plant without cooling if this can be done within two hours during the summer season.

6. That the milk house and surrounding premises be maintained in a cleanly and sanitary condition. Smoking or spitting within the milk house or dairy barn must be prohibited.

7. Since milk utensils constitute the commonest source of bacteria in fresh milk, great care should be taken to keep these not only clean, but also free from moisture. Drying of utensils either by artificial heat or inverting in the sun is as effective as any usual method of freeing utensils of bacteria. Strainer cloths, milk cans, aerators and milking machines may easily become so contaminated with bacteria as to spoil all milk coming in contact with them. A bulletin giving instructions concerning the care of milk and milk utensils at the dairy farm can be obtained either from the Commissioner of Health, the Secretary of Agriculture or the Dairy Department, State College.

8. The sanitary conveniences on the dairy farm, such as privy vaults, cesspools, etc., shall be fly tight and kept in a sanitary condition.

9. The water supply used in the dairy and for washing utensils shall be sufficiently abundant for all purposes, easy of access and free from any contamination.

RECOMMENDATIONS TO THE BOARDS OF HEALTH CONCERNING THE HANDLING OF MILK

1. That where it is deemed advisable for the protection or information of the consumer, the Board of Health require the milk distributor to show the butter fat content of milk as delivered to the consumer. This should be indicated upon the cap of the bottle as "Butter fat not less than ——— per centum".

2. That the consumer be educated in the value of milk as a food, care of milk after delivery and the use of graded milk.

3. That the consumer be educated in the return of milk bottles to the dealer. Dealers pay large sums of money annually for bottles that the consumers use for other purposes or destroy. The cost of this waste is paid for by the consumer.

4. That the application for a permit to handle milk be made upon a printed form furnished by the Board of Health upon which the applicant, if an individual, shall state therein his name in full and his residence, and if a corporation, shall state therein the name of such corporation and the full name and residence of each of its officers. Such application shall also state the location of the place

at which it is proposed to carry on business and in detail the manner in which milk is to be handled. Also the application shall indicate the number and character of wagons or other vehicles, if any, to be used by the applicant in or about his business and the name, address and estimated daily quantity in quarts which the applicant intends to obtain from each dairy farm, dealer, milk station or creamery.

5. That each person receiving a permit from the Board of Health to handle milk shall be advised concerning the two following Acts of Legislature. The Act of Legislature approved June 10th, 1897, prohibits the adulteration or coloring of milk and cream by the addition of so called preservatives or coloring matter. The Act of Legislature approved June 8th, 1911, prohibits, first: the sale of milk to which water or skimmed milk has been added or milk to which has been added any substance to increase its consistency or thickness. Second: the sale of milk containing less than three and one-quarter ($3\frac{1}{4}$) per centum of butter fat and less than twelve (12) per centum of milk solids. However if a person accused of selling milk containing less than three and one-quarter per centum of butter fat shall furnish satisfactory affidavit that nothing has been added to or taken from the milk in question, which is otherwise pure and wholesome, and is not below three (3) per centum of butter fat, the Dairy and Food Commissioner shall file affidavit with the record and no prosecution shall be instituted against such person. Third: the sale of cream which contains or is mixed with any added condensed or evaporated milk or cream, or cream to which has been added condensed or evaporated milk or cream, or cream to which has been added any substance for the purpose of increasing its consistency or thickness, or cream which contains less than eighteen (18) per centum of butter fat: Provided, That cream, when it contains or is mixed with any added condensed or evaporated milk or cream, may be sold, if the vessel or container in which such cream is sold is plainly labeled, stating the fact that such cream contains or is mixed with added condensed or evaporated milk or cream, and the amount thereof.

MODEL NUISANCE ORDINANCE

The authority for the enactment of ordinances pertaining to public nuisances as affecting the public health is derived from the Constitution of Pennsylvania, and enforced through the police power of the State.

The following model nuisance ordinance has been prepared by the State Department of Health as a general suggestion for Pennsylvania municipalities.

Local officials should carefully study the draft and determine its applicability to local conditions.

Any changes made to meet local requirements should receive the approval of the local law officer before enactment of the ordinance; for the suggested draft has been approved by the Attorney General of the Commonwealth as to legal form and compliance with requirements of the constitution.

The State Department of Health will be pleased to furnish additional information or advice, if requested by the local authorities.

AN ORDINANCE

for the protection of the public health; defining public or common nuisances; providing regulations for their control and abatement; for enforcement thereof, and penalties for violation.

ARTICLE I.

Definitions.

Section 1. Be it ordained by the Council of..... Pennsylvania, and it is hereby ordained by authority of the same; that for the purposes of this ordinance a public or common nuisance shall be considered as that which is set up, maintained or continued, so as to be injurious to the health or an obstruction to the use of property by interfering with the repose, health, safety or life of any considerable number of persons.

Section 2. For the purposes of this ordinance the term "waters of the State" wherever used, shall include all streams and springs, and all bodies of surface and of ground water, whether natural or artificial, within the boundaries of the State.

ARTICLE II.

Sewage Disposal.

Section 1. No privy, cesspool or other receptacle for human excrement shall be constructed, maintained or used so that flies have or may have access to the excrementitious matter contained therein.

Section 2. No privy, urinal, cesspool or other receptacle for human excrement shall be constructed, maintained or used which directly or indirectly drains or discharges over or upon the surface of the ground, or into any waters of the State.

Section 3. All privies, urinals, cesspools or other receptacles for human excrement shall be cleansed at sufficiently frequent intervals to prevent the contents from overflowing.

Section 4. The transportation of human excrement shall be effected in water-tight containers with tight fitting covers. Containers shall be thoroughly cleansed after each use.

Section 5. No human excrement or material containing human excrement shall be placed on the surface of the ground or buried or otherwise disposed of within 100 feet of or where it is likely to gain access to any waters of the State, unless subjected to treatment by a method approved by the Board of Health.

Section 6. The contents of privies, cesspools or other receptacles for human excrement shall not be used on ground within the corporate limits of..... unless subjected to treatment by a method approved by the Board of Health, and in accordance with regulations of the State Department of Health.

*Section 7. No privy, cesspool or similar receptacle for human excrement shall be constructed, maintained or used on premises where a sewer is at all accessible which is part of a sewer system from which sewage is lawfully discharged into the waters of the State.

Section 8. No privy, urinal, toilet or other receptacle for human excrement shall be constructed, maintained or used in any room, or have direct connection with any room wherein any kind of exposed foods or foodstuffs are prepared, stored or handled.

Section 9. No kitchen or laundry water shall be discharged or be permitted to discharge or flow into any gutter, street, roadway or public place.

Section 10. When kitchen or laundry waste water is disposed of by throwing onto the surface of the ground, borax, unslaked lime, hypochlorite of lime or other approved disinfectant and deodorant shall be applied thereto in a sufficient quantity to prevent offensive odors and the breeding of flies.

ARTICLE III.

Decaying Matter.

Section 1. No garbage, pomace, offal, dead animals, decaying matter or organic waste substance of any kind shall be thrown or deposited in any ravine, ditch or gutter; on any street or highway; into any waters of the State or be permitted to remain exposed upon the surface of the ground.

Section 2. Every person, firm or corporation using at the time of enactment of this ordinance any building or portion of a building within the.....as a stable for one or more horses, mules, cows, goats or swine, shall report the same in writing to the Secretary of the Board of Health within twenty (20) days after the date when this ordinance becomes effective. The said report shall

*This section appears also in the model plumbing ordinance. If any municipality adopts both ordinances, it is not necessary to include Section 7 in this ordinance.

include a statement of the name of the owner or lessee of such property, the location of the same and the number and kind of animals stabled therein.

Section 3. Every person, firm or corporation who shall use any building or portion of a building as aforesaid after the enactment of this ordinance shall in like manner report said use within five (5) days of said occupancy.

Section 4. Manure shall not be allowed to accumulate in or near stables, piggeries or roosts for a period of more than three days unless it is adequately protected against the breeding of flies.

Section 5. Manure shall not be allowed to accumulate in any place where it can prejudicially affect any source of drinking water.

Section 6. The carcass of any dead animal shall be removed and disposed of by burial, incineration or other proper method within twenty-four hours after death. If the carcass is buried it shall be placed so that every part shall be covered by at least two feet of earth and at a location not less than 100 feet from any well, spring, stream or other surface waters, and in a place not subject to overflow.

In all cases of death from communicable disease, the carcass, if disposed of by burial, shall first be thoroughly enveloped in unslaked lime.

Proper disposal shall be made by the owner of the animal or by the owner of the property on which the dead animal is found. Where the owner of the animal is unknown and the carcass is found upon any street, alley or other public place, it shall be removed and disposed of by the Board of Health at public expense.

ARTICLE IV.

Stagnant Water.

Section 1. All marshes or swamps, and all pools or ponds, either natural or artificial, shall be maintained by the owners free from the breeding of mosquitoes. If treatment is required to prevent the breeding of mosquitos, it shall be accomplished by filling, draining, stocking with larvae-eating fish, treating with larvacide or mineral oil or by some other method approved by the Board of Health.

Section 2. No person shall maintain or permit to be maintained any privy vault, cesspool, well, cistern, rain barrel, or other receptacle containing water in such a condition that mosquitoes may breed herein.

ARTICLE V.

Objectionable Establishments and Industrial Wastes.

Section 1. No person, partnership, firm or corporation maintaining a slaughter house, rendering works, depository of dead animals, glue works, tannery, woolwashing establishment, paper mill, by-product coke oven, dye works, oil refinery, dairy, creamery, cheese factory, milk station or similar establishment; or engaged in the manufacture of gas, chemicals, explosives, fertilizers, or similar products; or in the business of soap making, fish oil extraction, bone boiling or similar occupation; shall allow any noxious exhalation, odors or gases that are deleterious or detrimental to public health

to escape into the air, or any substance that is deleterious or detrimental to public health to accumulate upon the premises; or be thrown or allowed to discharge into any street, roadway or public place; or be thrown or allowed to discharge into any stream or other waters of the State.

Section 2. All slaughter houses, rendering works, bone boiling establishments, depositories for dead animals, garbage disposal works, piggeries and similar establishments handling organic matter shall have an adequate water supply for the purpose of keeping the place clean and sanitary. All floors shall be constructed of concrete or other impervious material and shall have adequate provision for drainage to a cesspool approved by the Board of Health, or to a sewer or treatment works approved by the State Department of Health.

Section 3. No pigsty or piggery shall be built or maintained on marshy ground or land subject to overflow, nor within 100 feet of any stream or other source of water supply, nor within 300 feet of an inhabited house or public meeting house on an adjoining property. When garbage is fed to pigs provision shall be made so that all unconsumed garbage shall be removed daily and disposed of by burial or incineration. No organic material furnishing food for flies shall be allowed to accumulate on the premises. All garbage shall be handled and fed upon platforms of concrete or other impervious material. Unslaked lime, hypochlorite of lime, borax or mineral oil shall be used daily in sufficient quantities to prevent offensive odors and the breeding of flies.

ARTICLES VI.

Water Supply.

Section 1. No owner or occupant of any premises shall maintain any well, spring, cistern or other source of water supply used for drinking or household purposes and to which the public has or may have access and which is polluted or which is so situated or constructed that it may become polluted in any manner that may render such water supply injurious to health.

ARTICLE VII.

Enforcement.

Section 1. It shall be the duty of the Board of Health to enforce the terms of this ordinance and secure compliance with the requirements thereof.

ARTICLE VIII.

Penalties.

Section 1. Any person, partnership, firm or corporation violating any of the provisions of this ordinance shall upon conviction therefor before any Justice of the Peace, Alderman or Magistrate be subject to a fine of not more than.....for each offense, and in default of the payment of said fine and costs of prosecution shall be imprisoned for a period of not exceeding..... days.

ARTICLE IX.

Repeal of Inconsistent Ordinances.

Section 1. All ordinances or parts of ordinances inconsistent herewith are hereby repealed.

